PRINTRONIX®

User's Manual

The Printronix SL5000^{e}™ and T5000^{e}™ Series of Thermal Printers

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Communication Notices

T5000e

Federal Communications Commission (FCC) Statement: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provided reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Printronix is not responsible for any radio or television interference caused by using other than recommended cables and connectors or by any unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Canadian Department of Communications Compliance Statement: This Class A digital apparatus complies with Canadian ICES-003.

Avis de conformite aux normes du ministere des Communcations du Canada: Cet appareil numerique de la classe A est conform á norme NMB-003 du Canada.

European Community (EC) Conformity Statement:
This product is in conformity with the protection requirements of EC Council Directive 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility. Printronix cannot accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the fitting of non-Printronix option cards.

German Conformity Statement:
Zulassungsbescheinigung Gesetz über die elektromagnetische Verträglichkeit von Geraten (EMVG) vom 30. August 1995

Dieses Gerät ist berechtigt in Übereinstimmung mit dem deutschen das EG-Konformitätszelchen - CE - zu führen.

Der Außteller der Konformitätserklärung ist die Printronix.....(1)

Informationen in Hinsicht EMVG Paragraph 3 Abs. (2) 2:

Das Gerät erfüllt die Schutzanforderungen nach EN 55024 und EN 55022 Klasse A.

EN 55022 Klasse A Geräte bedürfen folgender Hinweise:

Nach dem EMVG: “Geräte dürfen an Orten, für die sie nicht asreichend entstört sind, nur mit besonderer Genehmigung des Bundesminesters für Post und Telekommunikation oder des Bundesamtes für Post und Telekommunikation betrieben werden. Die Genehmigung wird erteilt, wenn keine elektromagnetischen Störungen zu erwarten sind.” (Auszug aus dem EMVG, Paragraph 3, Abs. 4) Dieses Genehmigungsverfahren ist nach Paragraph 9 EMVG in Verbindung mit der entsprechenden Kostenverordnung (Amtsblatt 14/93) kostenpflichtig.

EN 55022: Dieses ist eine Kategorie A Vorrichtung. Betrieb in den Wohnbereichen kann elektrische Störung verursachen. Es ist die Verantwortlichkeit des Benutzers, passende Gegenmaßnahmen zu ergreifen.

EN 55024: Begrenzung Werte für Gebrauch in bevölkerten Bereiche, kommerziellen und Industriegebieten sind innen Übereinstimmung mit den spezifizierten Anforderungen Hinsichtlich Störfreiheit.

Anmerkung: Um die Einhaltung des EMVG sicherzustellen sind die Geräte, wie in den Handbüchern angegeben, zu installieren und zu betreiben.

This product has been tested and found to comply with the limits for Class A Information Technology Equipment according to European Standard EN 55022. The limits for Class A equipment were derived for commercial and industrial environments to provide reasonable protection against interference with licensed communication equipment.

Warning

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

警告使用者:
這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

注意
　この装置は、第一種情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。　VCCI－A

此为A级产品。在生活环境中，该产品可能会造成无线电干扰。在这种情况下，可能需要用户对其干扰采取切实可行的措施。

SL5000e

Hereby, Printronix, Inc., declares that this T5204e, T5304e, SL5204e, SL5304e with optional suffixes is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

Par la présente Printronix, Inc. déclare que l'appareil T5204e, T5304e, SL5204e, SL5304e avec des suffixes facultatifs est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.

Par la présente, Printronix, Inc. déclare que ce T5204e, T5304e, SL5204e, SL5304e avec des suffixes facultatifs est conforme aux exigences essentielles et aux autres dispositions de la directive 1999/5/CE qui lui sont applicables.

Hiermit erklärt Printronix, Inc., dass sich dieser/diese/dieses T5204e, T5304e, SL5204e, SL5304e mit wahlweise freigestellten Suffixen in Übereinstimmung mit den grundlegenden Anforderungen und den anderen relevanten Vorschriften der Richtlinie 1999/5/EG befindet. (BMWi)

Con la presente Printronix, Inc. dichiara che questo T5204e, T5304e, SL5204e, SL5304e con i suffissi facoltativi è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.

Por medio de la presente Printronix, Inc. declara que el T5204e, T5304e, SL5204e, SL5304e con sufijos opcionales cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Printronix is not responsible for any radio or television interference caused by using other than recommended cables and connectors or by any unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any change or modification to this product voids the user's authority to operate it per FCC Part 15 Subpart A Section 15.21 regulations.

CAUTION: This product should be positioned so that personnel in the area for prolonged periods may safely remain at least 23 cm (9 in) from the readers antenna surface in an uncontrolled environment. See FCC OET Bulletin 56 "Hazards of radio frequency and electromagnetic fields."

This product contains an intentional radiator with the following parameters:
Operating Frequency: 902 to 928 MHz
Typical RF Power: 25 to 100 milliwatts (SL5x04 MP) or 25 to 205 milliwatts (SL5x04 C1)
Maximum RF Power: 1 Watt under abnormal conditions

Printronix SL5000^{e} and T5000^{e} SR

Tested To Comply
With FCC Standards

FOR HOME OR OFFICE USE

Canada

This Class B digital apparatus complies with Canadian ICES-003 and RSS 210.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

CE Notice (European Union)

Marking by the CE symbol indicates compliance of this Printronix system to the EMC Directive and the Low Voltage Directive of the European Union. Such marking is indicative that this Printronix system meets the following technical standards:

- EN 300 220-1 (2000), Electromagnetic Compatibility and Radio Spectrum Matters; Short Range Devices; Radio equipment to be used in the 25 MHz 10 1000 MHz frequency range with power levels ranging up to 500 mW.
- EN 55022 — "Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment."

- EN 50082-1: 1992 — “Electromagnetic compatibility—Generic immunity standard Part 1: Residential, commercial, and light industry.”
- EN 60950 — “Safety of Information Technology Equipment.”

This printer is a Class B product for use in a typical Class B domestic environment.

CE Symbol

CE

Declaration Of Conformity

Manufacturer:	Printronix, Inc. 14600 Myford Rd. Irvine, CA 92623 U.S.A.

declares that the product:

Product Type:	Information Technology Equipment, Printer
Equipment Class:	Commercial and Light Industrial
Model Numbers:	T5204e, T5304e, SL5204e, SL5304e with optional suffixes
Configuration:	serial, parallel, coax, twinax, external LAN, Ethernet, Wireless Ethernet, RFID

conforms to the following standards:

Safety:	EN 60950: 1992 +A1, A2, A3, A4, A11
EMC:	ETSI EN 301 489-1 ETSI EN 301 489-3 ETSI EN300 220 V1.3.1 Sec. 8.1, 8.2, 8.6, 8.7, 8.9 EN 55022: 1998 +A1 Class B EN 55024: 1998 EN 61000-4-2 EN 61000-4-3 EN 61000-4-4 EN 61000-4-5 EN 61000-4-6 EN 61000-4-8 EN 61000-4-11 EN 61000-3-2: 2000 EN 61000-3-3: 1995 +A1

and complies with:

The Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC.

Taiwan

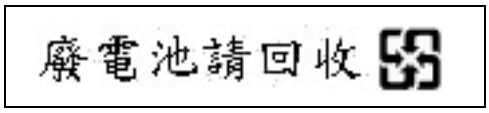
乙類

此設備經測試證明符合 BSMI(經濟部標準檢驗局)之乙類數位裝置的限制規定。這些限制的目的是爲了在住宅區安裝時，能防止有害的干擾，提供合理的保護。此設備會產生、使用並散發射頻能量；如果未遵照製造廠商的指導手冊來安裝和使用，可能會干擾無線電通訊。但是，這並不保證在個別的安裝中不會產生干擾。您可以透過關閉和開啓此設備來判斷它是否會對廣播和電視收訊造成干擾；如果確實如此，我們建議您嘗試以下列一種或多種方法來排除干擾：

・重新調整天線的接收方向或重新放置接收天線。
・增加設備與接收器的距離。
・將設備連接至不同的插座，使設備與接收器連接在不同的電路上。
・請向經銷商或有經驗的無線電／電視技術人員查詢，以獲得幫助。

Lithium Battery Warning

The controller board contains a lithium battery sealed inside the real-time clock chip. Do not disassemble the chip to replace the battery. Do not dispose of the chip by incineration. Failure to comply may cause the battery to explode. Contact your local waste agency for the correct disposal procedure.



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IMPORTANT WARRANTY INFORMATION

PRINTER WARRANTY

Printronix® warrants to purchaser that under normal use and service, this printer (excluding the thermal printhead) purchased hereunder shall be free from defects in material and workmanship for a period of ninety (90) days from the date of shipment from Printronix.

Consumable items such as media and ribbons are not covered under this warranty. This warranty does not cover equipment or parts that have been misused, altered, or used for purposes other than those for which they were manufactured. This warranty also does not cover loss, shipping damage, damage resulting from accident or damages resulting from unauthorized service.

THERMAL PRINTHEAD

Printronix warrants the printhead for a period of one hundred eighty (180) days, or 1,000,000 linear inches for direct thermal use, or 2,000,000 linear inches for thermal transfer use, whichever comes first. The warranty does not cover printheads that have been misused, damaged due to improper cleaning, or damaged due to use of improper ribbons or media.

SUPPLIES

For the nearest Printronix full-service distributor that carries Printronix genuine supplies, please call 1-800-733-1900 or fax (714)-368-2354. Supplies design, specification, and selection are integral to the development of any computer imaging system. Printronix's extensive manufacturing and research capabilities, along with years of experience in the design of printers and their applications, assures that you will receive the exact materials that you require to maximize the performance of your Printronix printer. For more information, call the Printronix Customer Solutions Center at (714) 368-2686 or access the Printronix website at http://www.printronix.com.

ON-SITE MAINTENANCE SERVICE

Printronix offers on-site support services in the United States. Please contact the Printronix Maintenance Contracts Group at (714) 368-2798 for detailed service agreement information.

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1 *Introduction*

Printronix Customer Support Center

The Printronix Customer Support Center offers technical support with:

- Installation
- Configuration and setup
- Operation and supplies loading
- Specifications of the proper print media and ribbon
- Answers to post-sale service support questions

Call the Printronix Customer Support Center at:

1-714-368-2686 in the Americas

31-24-6489489 in Europe, Middle East, and Africa

65-65484114 in Asia Pacific

or visit the Printronix web page at **www.printronix.com**

http://www.printronix.com/public/servicesupport/default.aspx

Training Available On Printronix Products

Printronix offers Product Maintenance Training Classes designed to enhance the knowledge of your service personnel. Led by Printronix' staff of highly trained, experienced instructors, these structured classes include:

- Hands-on work with the product
- Theory of operation
- Diagnosis of equipment failures
- Preventive and corrective maintenance requirements and procedures.

Customized classes designed to meet your specific needs are available upon request. Call Customer Training at (714) 368-2332 or visit the Printronix website at **www.printronix.com**.

Warnings And Special Information

For your safety and to protect valuable equipment, read and comply with all information highlighted under special headings:

WARNING **Conditions that could harm you and damage the equipment.**

WARNING **Achten Sie auf folgendes, um keine Personen in Gefahr zu bringen bzw. das Gerät zu beschädigen.**

WARNING **Condiciones que pueden causar daños a personas y equipos.**

WARNING **Conditions à respecter pour éviter tout danger corporel et dommage matériel.**

WARNING **Condizioni che possono arrecare danni alle persone e alle apparecchiature.**

CAUTION **Conditions that could damage the printer or related equipment.**

IMPORTANT **Information vital to proper operation of the printer.**

NOTE: Information and helpful tips about printer operation.

Manual Conventions

- Operator panel keys are printed in uppercase letters.

  Example: Press the PAUSE key and then press ENTER.

- Operator panel keys are often shown by their symbol or icon (located on the control panel directly below the key).

  Example: Press the ↵ key for ENTER.

- Liquid Crystal Display (LCD) messages are printed in uppercase letters inside quotation marks (“ ”).

  Example: When “OFFLINE” appears on the LCD, you may release the PAUSE key.

- LCD fault messages display the specific fault in uppercase letters on the top line. A corrective action in upper and lowercase letters displays on the bottom line.

  Example: PAPER OUT
  Load Paper

- Key combinations are indicated by the **+** (plus) symbol.

  Example: Press ↑ **+** ↓ means *Press the Up* ↑ *key and the Down* ↓ *key at the same time.*

The T5000 Series Label Printer

NOTE: As used in this manual, the terms “T5000” and “printer” refer to all models within the T5000 series. “SR” refers to all models that are Smart Ready. “SL” refers to all SmartLine models.

The T5000 series consists of a family of high quality, direct thermal and thermal transfer printers specifically designed for printing labels and tags from any MS-DOS®, Windows®, ASCII, or EBCDIC (with the Coax/Twinax option) based compatible computer.

The T5000, Smart Ready, and SmartLine series are comprised of the products detailed in Table 1.

Table 1. The T5000, Smart Ready, and SmartLine Series

Model	Max Print Speed (ips)	Printing Density (dpi)	Max Print Width (inches)
SL5204e-MP	10	203	4.1
SL5204e-C1	10	203	4.1
SL5204e-DK	10	203	4.1
SL5204e-SR	10	203	4.1
SL5304e-MP	8	300	4.1
T5204	10	203	4.1
T5204e	10	203	4.1
T5204e SR	10	203	4.1
T5204-DT*	10	203	4.1
T5206	10	203	6.6
T5208	8	203	8.5
T5304	8	300	4.1
T5304-DT*	8	300	4.1
SL5304e-C1	8	300	4.1
SL5304e-MP	8	300	4.1
SL5304e-SR	8	300	4.1
T5306	8	300	6.6
T5308	6	300	8.5

* Direct Thermal only 4 inch models (no ribbon transfer support)

Standard Features

- Your thermal printer has the standard LinePrinter Plus® (LP+) emulation which provides direct compatibility with Printronix P-series printers. In addition, the printer has co-resident IGP®/PGL® and IGP/VGL emulations which provide printer system commands for text, barcodes, graphics, lines, and boxes.
- Direct thermal printing and thermal transfer (thermal transfer is not supported on 4 inch DT models).
- Standard interfaces:
  - Serial: RS-232 and RS-422
  - Parallel: Centronics®-compatible parallel, IEEE® 1284 compliant parallel

NOTE: The interface cable needed to connect the printer to the host device is supplied by the user.

- Supports over 20 types of bar codes.
- Download fonts, forms, and graphics to printer memory.

  The standard resident fonts are Letter Gothic Bold (#93779), Courier Bold (#93952), CG Triumvirate Bold Condensed (#92250), OCR-A (#90993), and OCR-B (#91409). All other fonts are optional.
- High resolution printhead for sharp graphics and text.
- Label Taken Sensor for detecting removal of labels in Tear-Off mode (and in Peel-Off mode when optional rewinder is installed).
- Tear-Off mode for positioning the label at the tear-off position and detecting its removal before printing the next label.
- Tear-Off Strip mode for printing a specified number of labels and positioning the last label at the tear-off position.
- 8MB DRAM memory.
- 4MB Flash memory.
- Auto Label Mapping® for compatibility with programs written for Printronix Line Matrix printers.
- Ventless system for operation in environments with airborne particulate matter without compromising performance.

Optional Features

Ask your authorized representative about the following enhancement options:

- **Fonts:** A selection of fonts is available to extend the capabilities of the standard resident fonts.
- **Internal Label Rewinder**: In label peel-off mode, peels off labels one at a time before printing the next label and rewinds the liner into a discardable roll. In batch rewind mode, rewinds printed labels into a removable roll.
- **Memory Expansion (for non-IPDS printers only):**
  - 16MB DRAM SIMM - Provides additional memory to accommodate long label formats.
  - 10MB Flash SIMM - Provides additional memory for forms, logos, and fonts.
- **Media Cutter:** The cutter is used to automatically cut printed media when the media exits the printer. Cutters are available in the Standard 4 inch model and the Heavy Duty 4 , 6, and 8 inch models. See Appendix A for details.
- **Media Cutter Tray:** This option is used with the media cutter option to catch the cut media in a bin.
- **Coax/Twinax Host Interface:** This provides connection to a host computer system using a Coax or Twinax interface.
- **Network Interface Card (NIC):** This option allows you to attach the printer to a LAN (Local Area Network) rather than attaching it directly to a host computer.
- NIC adapters are available as an internally installed option, mounted inside the printer with the 10/100Base-T (UTP) connection only. The parallel port is no longer accessible when the NIC option is installed.

NOTE: In this manual, the terms “Network Interface Card” (or “NIC”) and “Ethernet” are used interchangeably.

- **IPDS:** IPDS™ is available for Twinax or a NIC or a combination of both.

NOTE: The basic NIC does not support IPDS.

- **TN5250/TN3270:** The TN5250/TN3270 feature enables your printer to communicate with an IBM host through a NIC using the 5250/3270 datastream. This feature allows you to use an application generated for the Twinax/Coax emulation to be printed through the NIC.
- **Online Barcode Validator:** This option provides online validation of printed barcodes. When you incorporate a bar code quality procedure into the printing process, you will increase the overall bar code quality, reduce waste from misprinted bar codes, and achieve high, first-time read rates. This is increasingly important in newer, more efficient systems where manually entered data is not acceptable as a back-up function. Validation also minimizes the cost of returned products due to poor reading or unaccountable bar codes.

- **Power Cart:** The Power Cart is an ergonomically designed cart with durable steel frame and battery support systems for maximum maneuverability. The combination of the wireless T5000e and the rugged Power Cart delivers a mobile on demand bar code printing system.
- **PPI1 and PPI2 Interpreters:** PPI 1.0 (Zebra) and PPI 2.0 (TEC) interpreters are powerful integration tools that allows the T5000e to function in virtually all legacy ZPL and TEC application environments without requiring modification to host data stream. PPI 1.0 (Zebra) enables you to print files formatted for Zebra printers to the Printronix T5000e. PPI 2.0 (TEC) prints files formatted for TEC printers to the Printronix T5000e.
- **Dual NIC Card (10/100BaseT & 802.11b wireless):** The Dual NIC provide both 10/100BaseT or 802.11b connectivity in one. The card provides wireless connectivity without expensive cabling and reconfigurations required from a wired network. It also provides 10/100 BaseT for wired network and wireless back up. The remote management software, a powerful printer management tool, is standard with the Dual NIC (10/100BaseT & 802.11b wireless).
- **NIC (10/100BaseT) Internal or External:** The NIC 10/100BaseT connectivity option provides wired networks in either internal or external options. The remote management software is standard with this option.

For more information about printer options, see Appendix B.

Thermal Printer Technology

Quiet and fast, with excellent print quality, your multifunction thermal printer uses an inline thermal printhead. The thermal printer operates differently from a line matrix or laser printer, because the thermal printer uses a printhead with heating elements and special paper or ribbon.

The Printing Process

The thermal printhead allows two modes of operation:

- **Direct Thermal**

  During *direct* thermal printing, the thermal printhead selectively heats small, rectangular *thermal* dots. When these contact the coated thermal paper, the dyes and developers in the coating react to the heat and develop an image. This mode of printing is generally used for short-term labeling applications.

- **Thermal Transfer**

  During thermal *transfer* printing, the heated thermal dots contact a thermal ribbon. The heat reacts with the ribbon and bonds the image to the paper. This method is used especially for abrasive, long-storage applications and for specialized applications, such as in extreme environmental conditions or where tamper-proofing is required.

NOTE: Thermal transfer is not supported on 4 inch DT model printers.

Dynamic Print Control

Dynamic print control is a unique feature of your thermal printer that provides excellent print quality by preventing unevenness of print density.

Print quality largely depends on how the thermal paper or the thermal ribbon and thermal transfer paper responds to the heat of the thermal printhead. During printing, the thermal printhead must reach a set temperature in the shortest possible time. Then it must cool down to the original temperature in the shortest possible time after printing. Thus print quality is dependent on the precise control of the energy supplied to the thermal dots.

The dynamic print control is a method for predicting the quantity of heat required to print dots based on the results of the previous printing. This prevents unevenness of print density and results in the printing of narrow-ladder bar codes or vertical grid lines that are straight from the microscopic viewpoint.

Thermal Consumables

Media Selection

Since there are two print modes of operation, there are two kinds of thermal media:

- Direct thermal media
- Thermal transfer media

Direct thermal media is paper coated with special chemicals that act as an accelerator, acceptor dye, and binder. During direct thermal mode, the heat from the thermal printhead contacts the paper and causes a chemical reaction.

Thermal transfer media requires ribbon. A wide range of Printronix thermal transfer media is available, such as film or synthetic paper substitutes. Most of these media options can be die-cut for easy label applications. The wide selection of media sizes and face stocks have been tested with Printronix ribbons for print quality and usage. Consult your Genuine Printronix Supplies Catalog, call the Printronix Customer Solutions Center at (714) 368-2686, or access the Printronix web page at **www.printronix.com**.

NOTE: The term “media” used in this manual refers to all the different kinds of paper or tag stock that can be used in the printer.

See “Genuine Printronix Media” on page 349 for more information.

Ribbons

Printronix offers a wide range of ribbons specifically engineered to enhance printing capabilities and to prevent premature printhead wear. Therefore, you should use a Genuine Printronix Thermal Ribbon in your printer.

See “Genuine Printronix Thermal Transfer Ribbons” on page 348 for more information.

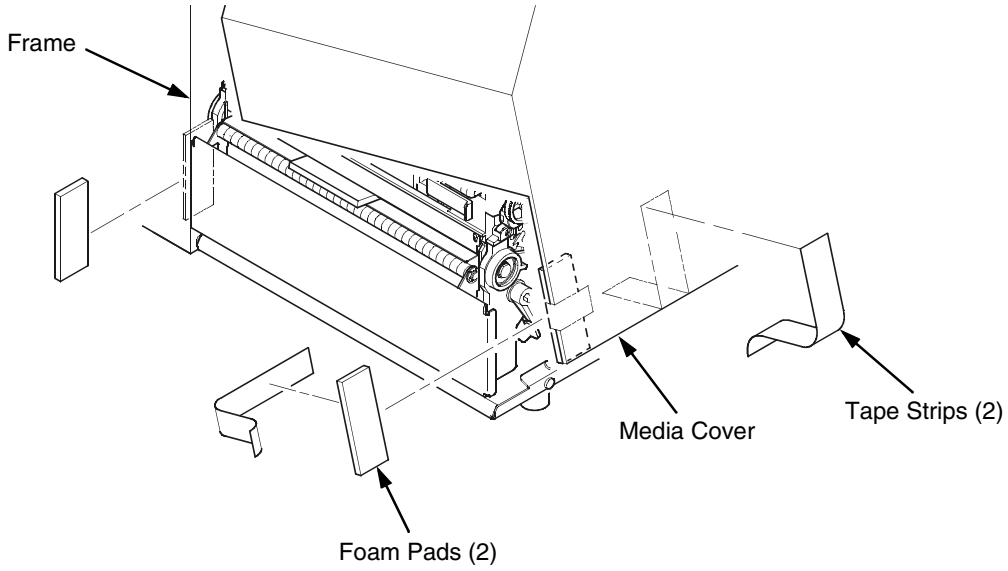
Setting Up The Printer

Unpacking The Printer

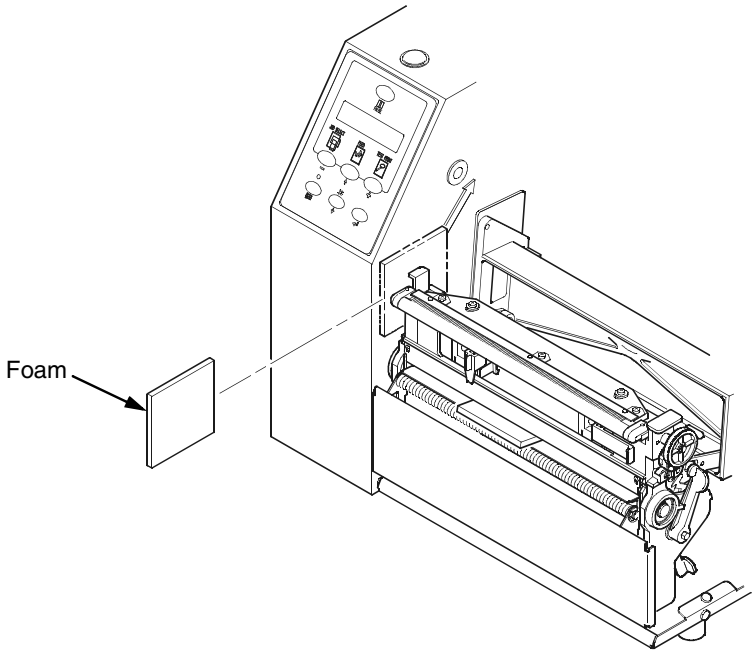
The printer is shipped in a carton and protective bag. The top lid of the carton has instructions for removing the internal packing material. Keep all packing material in case repacking is required.

CAUTION **Avoid touching the electrical connectors to prevent electrostatic discharge damage while setting up the printer. The discharge of accumulated electrostatic energy can damage or destroy the printhead or electronic components used in this device.**

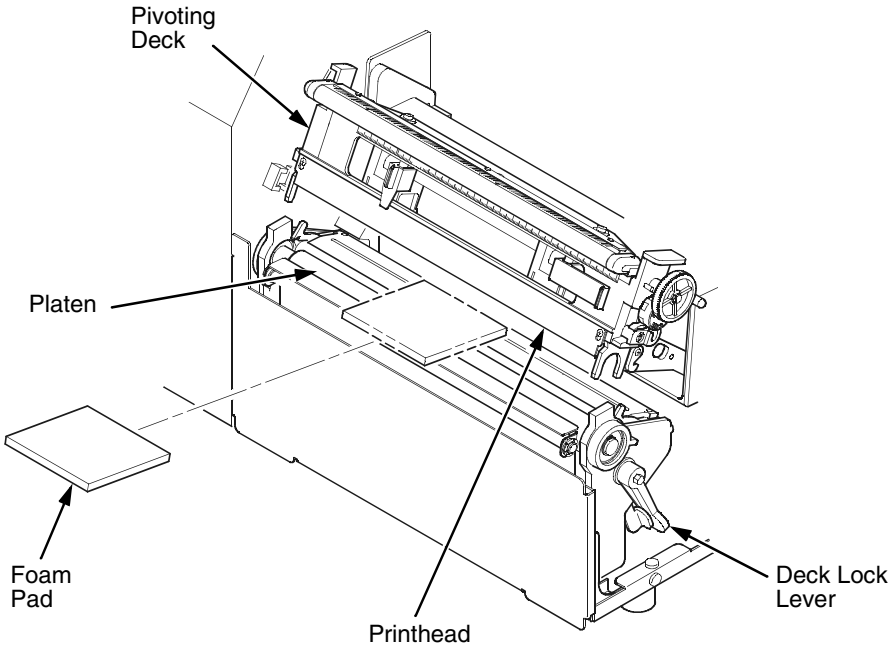
CAUTION **Do not place the printer on its backside during unpacking or handling, because you may damage the printer interface connector.**



1. Remove the tape strips from the media cover. Lift open the media cover.
2. Remove the tape securing the foam pad to the inside of the media cover.
3. Remove the foam pad between the front door and the frame.



4. Remove the foam pad between the pivoting deck and the frame.



5. Open the pivoting deck by rotating the blue deck lock lever fully clockwise.
6. Remove the foam pad from between the printhead and the platen (rubber roller).
7. Close the pivoting deck and media cover.

Installation

The following sections will guide you through the printer installation process.

1. Place the printer on a flat level surface that allows easy access to all sides of the printer.

CAUTION **Never operate the printer while it is resting on its side or upside down.**

2. Check that the printer power switch is in the OFF (O) position.

WARNING **Failure to properly ground the printer may result in electric shock to the operator.**

In compliance with international safety standards, this printer has been equipped with a three-pronged power cord. When inserted in a correctly wired power outlet, the ground conductor will ensure that the printer chassis is at ground (earth) potential. Do not use adapter plugs or remove the grounding prong from the cable plug. If an extension cord is required, ensure that a three-wire cable with a properly grounded plug is used.

3. Attach the AC power cord to the AC power receptacle in the back of the printer.

CAUTION **Verify the required voltage on the printer's model number label on the rear of the printer.**

4. Attach the AC power cord to a grounded (three prong) electrical outlet of the proper voltage.

5. Attach Interface:

   a. Parallel Interface

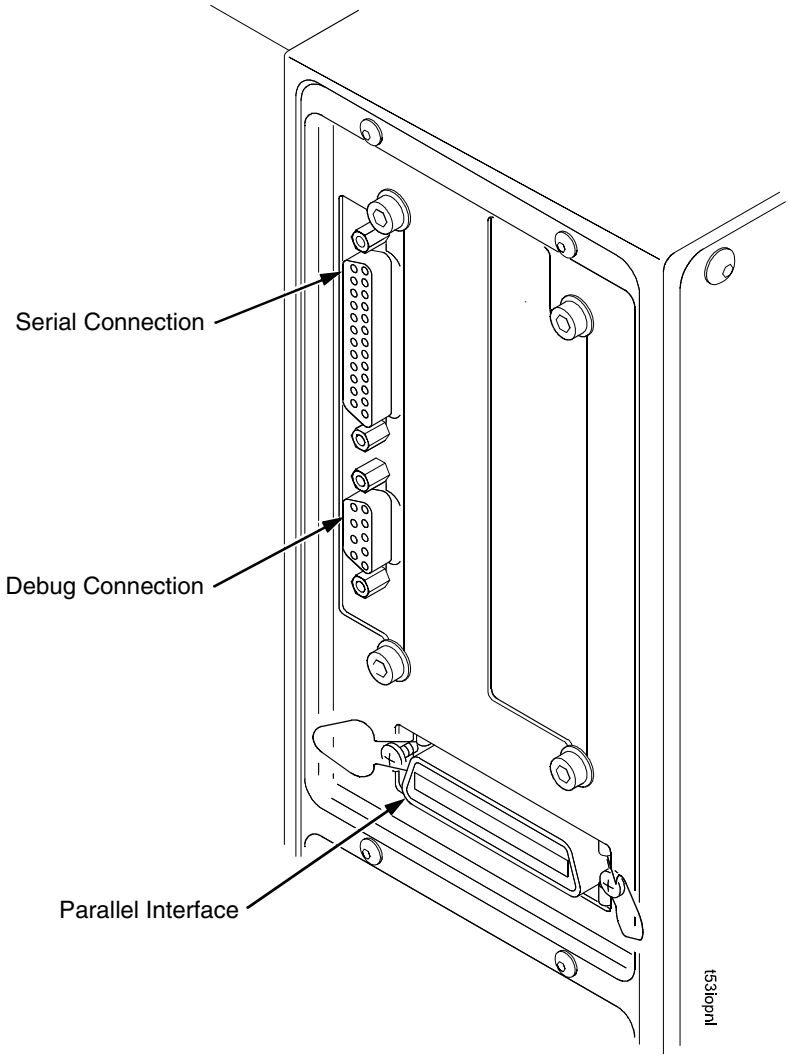
      Attach a suitable parallel printer cable from the computer to the Centronics/IEEE 1284 interface connector at the back of the printer. Snap the bail locks to the Centronics connector to secure the interface cable to the printer.

   b. Serial Interface

      Attach a suitable serial printer cable from the computer to the DB-25 RS-232 serial interface connector at the back of the printer. For additional information on serial cable wiring, refer to “Diagnostics And Troubleshooting” on page 307.

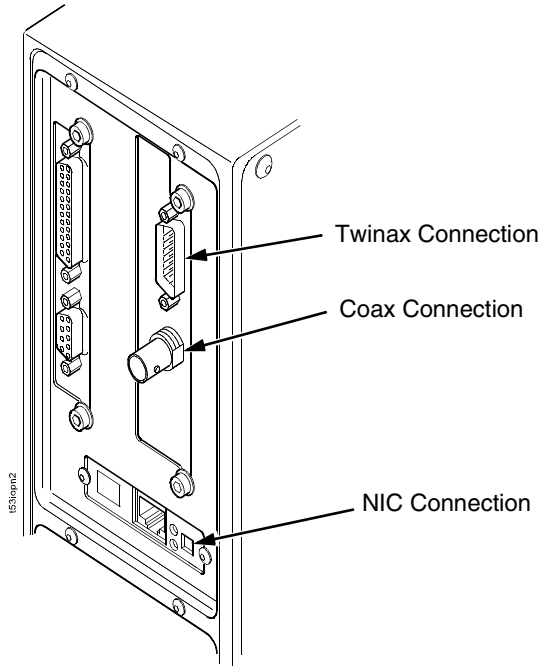
NOTE: The printer supports simultaneous connection of the parallel and serial interfaces using the Auto Switching feature. Auto Switching is described on page 299.

Standard Interface Panel

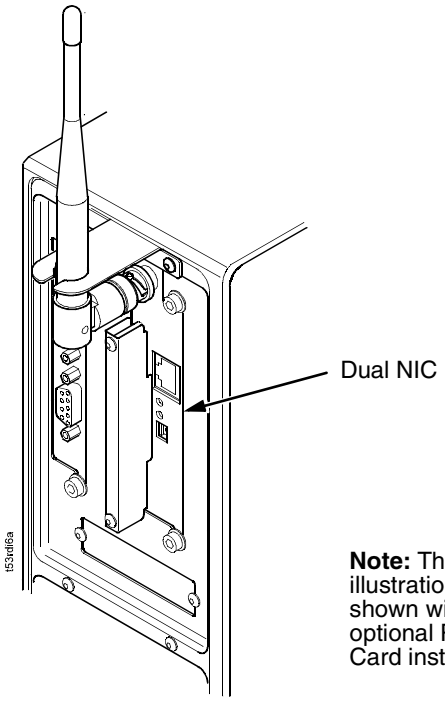


If your printer is equipped with the Coax/Twinax, Network Interface Card (NIC), or Dual NIC interfaces, the rear I/O panel will appear as illustrated below.

Coax/Twinax and NIC Interface Panel



Dual NIC Interface Panel



Note: This illustration is shown with an optional Radio Card installed.

c. Coax Connection

   Attach a suitable coaxial cable from the computer to the coax connector located in the I/O plate in the back of the printer.

d. Twinax Connection

   Attach a suitable twinax cable from the computer to the twinax connector located in the I/O plate in the back of the printer.

e. NIC Connection

   Insert a suitable NIC cable from your hub or switch to the NIC connector located in the I/O panel in the rear of your printer.

2 Operation

Controls And Indicators

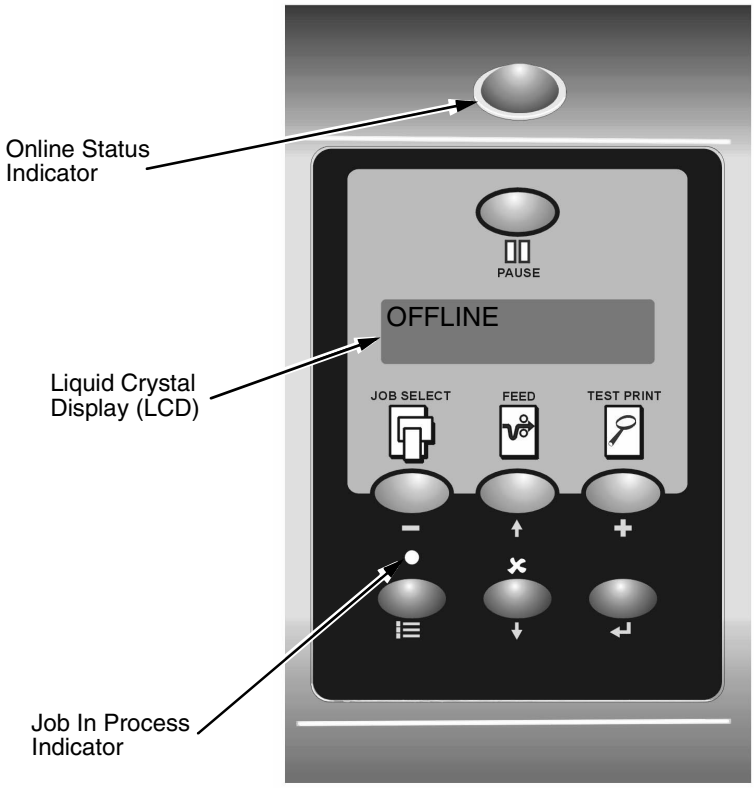
Power Switch

The power switch is located on the bottom back panel of the printer. To apply power, place the switch in the | (ON) position. When you first power on the printer, a series of initialization messages will appear on the Liquid Crystal Display (LCD) on the control panel.

To remove power, place the power switch in the O (OFF) position.

Control Panel

The control panel is located on the front of the printer and includes an LCD, indicators, and control keys (buttons). These are described in the following tables. (Also refer to Chapter 3.)



Indicator	Description	Function in Online Mode	Function in Offline Mode	Function in Menu Mode
Online Status	Indicates when the printer is online, offline, or when there is a fault condition.	Stays lit when the printer is online, ready to print, and accept data from the host. Flashes during a fault condition.	Off when the printer is offline. Flashes during a fault condition.	Off. Flashes during a fault condition.
Liquid Crystal Display (LCD)	A backlighted liquid crystal display with two rows of 16 characters each.	Displays “ONLINE,” the interface type, and emulation in use. During a fault condition, displays the specific fault message and the corrective action.	Displays “OFFLINE.” During a fault condition, displays the specific fault message and the corrective action.	Displays “OFFLINE” and a main menu, submenu, or option. During a fault condition, displays the specific fault message and the corrective action.
Job In Process	Indicates when the printer is receiving or processing data.	Flashes when receiving data. Stays lit when data has been processed and is waiting to be printed. Off when no data is being received or when no data remains in the buffer.	Flashes when receiving data. Stays lit when data has been processed and is waiting to be printed. Off when no data is being received or when no data remains in the buffer.	None

Control Panel Keys

Button	Description	Function in Online Mode	Function in Offline Mode	Function in Menu Mode
PAUSE	**PAUSE Key** Toggles the printer between Online and Offline Modes.	Sets printer to Offline Mode.	Sets printer to Online Mode.	Sets printer to Offline Mode.
JOB SELECT -	**JOB SELECT Key** **DECREMENT Key in Menu Mode**	None	Displays the name and number of the last loaded configuration and allows you to load the factory and/or pre-stored printer configurations.	Scrolls left through main menus. Decrements option values within submenus.
FEED ↵	**FEED Key** **UP Key in Menu Mode**	Advances the media one label length.	Advances the media one label length.	Scrolls the current menu selection one level up.
TEST PRINT +	**TEST PRINT Key** Pressing the ↵ (ENTER) key with a Diagnostic Test displayed initiates the test. Pressing ↵ again terminates the test. **INCREMENT Key in Menu Mode**	None	Scrolls through the Test Print patterns.	Scrolls right through main menus. Increments option values within submenus.

Control Panel Keys (cont.)

Button	Description	Function in Online Mode	Function in Offline Mode	Function in Menu Mode
	CANCEL Key When the CANCEL key is enabled, pressing it will clear all data in the printer buffer and prevent printing of that data. **Note:** The factory default = Disable. However, when the Coax/Twinax Interface option is installed, the factory default = Enable. **DOWN Key in Menu Mode**	None	Clears all data in the printer data buffer when enabled.	Scrolls the current menu selection one level down.
	MENU Key	Takes the printer Offline and selects the Menu Mode.	Selects the Menu Mode.	Scrolls between main menu selections.
	ENTER Key Pressing the ↵ (ENTER) key in Menu Mode selects the displayed option or value. An asterisk then appears next to the option or value indicating it has been selected. **Note:** If the ENTER key is locked, “ENTER SWITCH LOCKED” displays on the LCD for one second. Press the ↓ (DOWN) and ↵ (ENTER) keys at the same time to unlock the ENTER key.	None	None	Selects the current menu value and displays an asterisk (*) next to the value.

Powering On The Printer

When you power on the printer, it executes a self-test. During the self-test, the LCD momentarily displays the DPI resolution (203 or 300 DPI) of the installed printhead. The default power-on state is online. Once the printer has successfully initialized, the ONLINE status indicator light illuminates, and the LCD indicates the communication interface selected and the type of emulation installed.

If there is a fault during the self-test, the ONLINE status indicator flashes, and a fault message appears on the display. The alarm may also sound, if configured to do so.

Operating Modes

The current operating mode can be selected through the control panel keys or can result from routine operations such as powering on the printer.

Online: In online mode, the printer can receive and print data sent from the host. Pressing the PAUSE key toggles the printer between the online and offline modes. The ONLINE status indicator is lit in online mode.

Offline: In offline mode, you can perform operator functions such as loading media or changing ribbon. Pressing the PAUSE key toggles the printer from offline to online mode. The ONLINE status indicator is not illuminated in offline mode.

Menu: Pressing the MENU key takes the printer offline and into Menu mode. In this mode, you can navigate through all configuration and status menus and change the printer configuration.

Fault: In fault mode, a fault condition exists that must be cleared before printing can continue. The ONLINE status indicator flashes, the alarm beeps (if configured to do so), and a descriptive fault message displays.

The fault must be corrected first and then the message cleared by pressing the PAUSE key before normal printing can continue.

Media Handling Modes

Before you load media, you must decide which media handling mode to use:

- **Continuous**. Prints on the media and sends it out the front of the printer. When the optional internal rewinder is installed, use “Continuous” for Batch Rewind mode (see page 56).
- **Tear-Off Strip**. Prints on the media and sends it out the front until the print buffer is empty then positions the last label over the tear bar for removal.
- **Tear-Off**. After each label is printed, the printer positions the label over the tear bar and waits for you to tear off the label before printing the next label (on-demand printing). A “Remove Label” message will display to remind you to remove the label before the next one can be printed.

- **Peel-Off**. When the optional internal rewinder is installed, the printer prints and peels die-cut labels from the liner without user assistance. The label liner is wound on the rewinder. The printer waits for you to take away the label before printing the next one (on-demand printing). A “Remove Label” message will display to remind you to remove the label before the next one can be printed. For Label Peel-off information, see page 62.
- **Cut**. When the optional media cutter is installed, the printer automatically cuts media after each label is printed or can cut the media after a specified number of labels have been printed using a software cut command.

Once you have decided on the mode, configure the printer. See Chapter 3 for more information.

Loading Media And Ribbon

NOTE: This section describes the procedures for loading various types of media and ribbon. You can also refer to instructions on the printer itself, on a label on the inside of the media cover.

The term “media” in this manual refers to all the different kinds of paper, label, or tag stock material that can be printed on by the printer. Your thermal printer can print on continuous paper, adhesive backed labels, or non-adhesive tags packaged in roll or fanfold form.

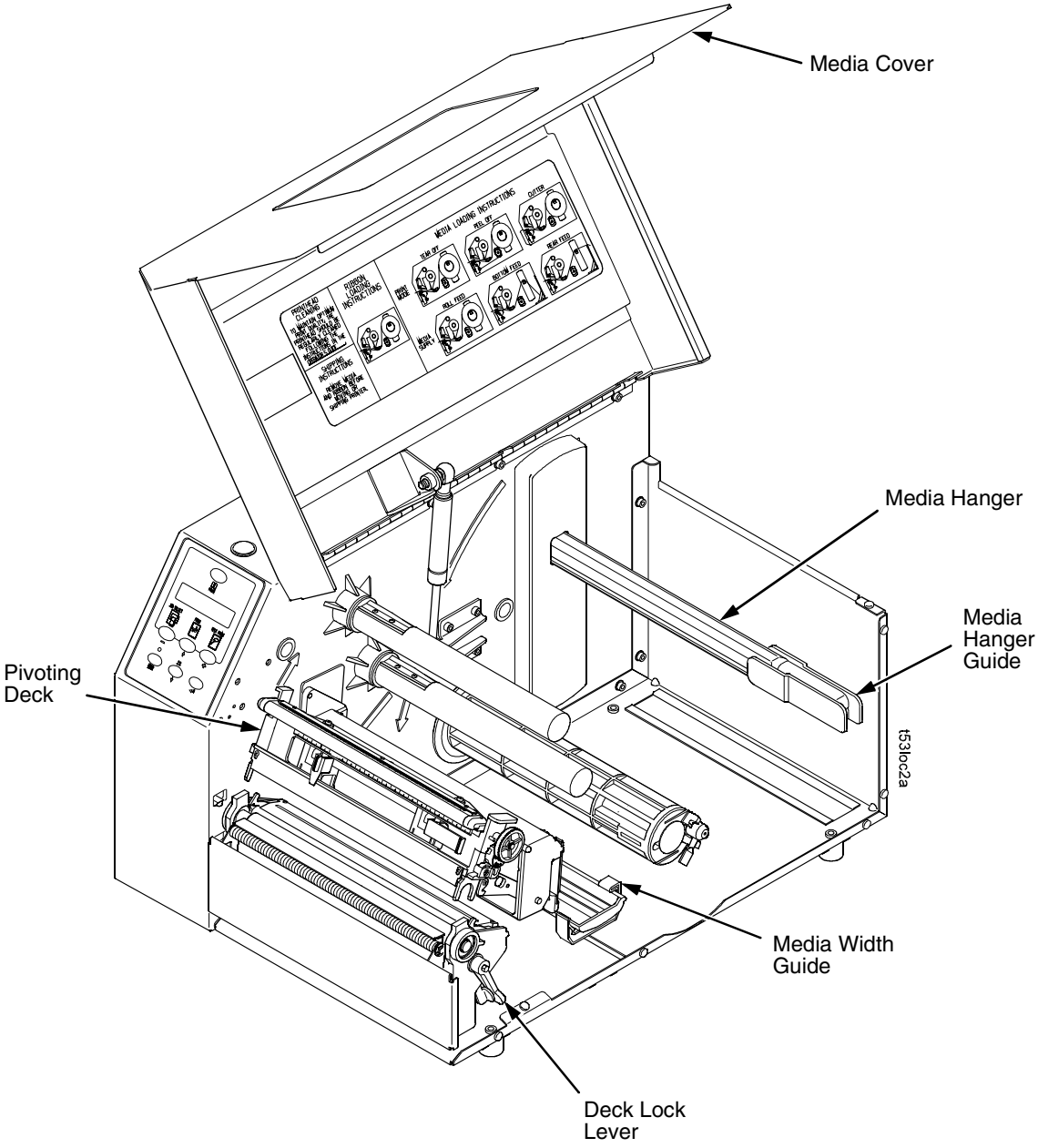
CAUTION **DO NOT TOUCH the printhead or the electronic components under the printhead assembly. The discharge of electrostatic energy that accumulates on the surface of the human body or other surfaces can damage or destroy the printhead or electronic components used in this device.**

CAUTION **Do not close the pivoting deck without label stock installed between the printhead and the platen, because debris on the platen may damage the printhead.**

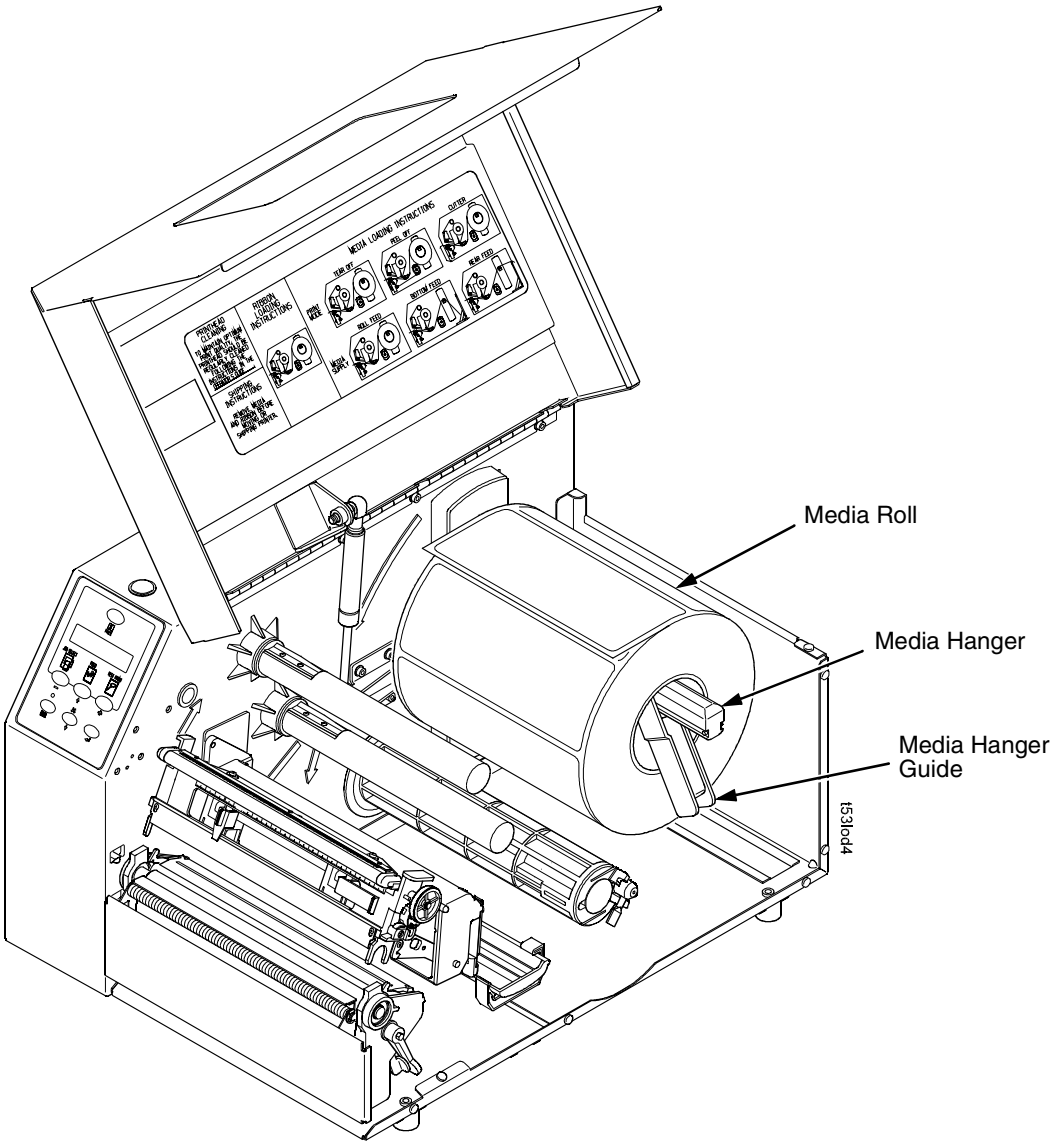
IMPORTANT **Adhesive backed labels that DO NOT lay flat on the liner can jam the printer. This can cause the label to peel off the liner. The exposed edges can stick to the label guides and rollers inside the printer.**

If you run out of labels while printing, do not turn off the printer while reloading labels, because you can lose data.

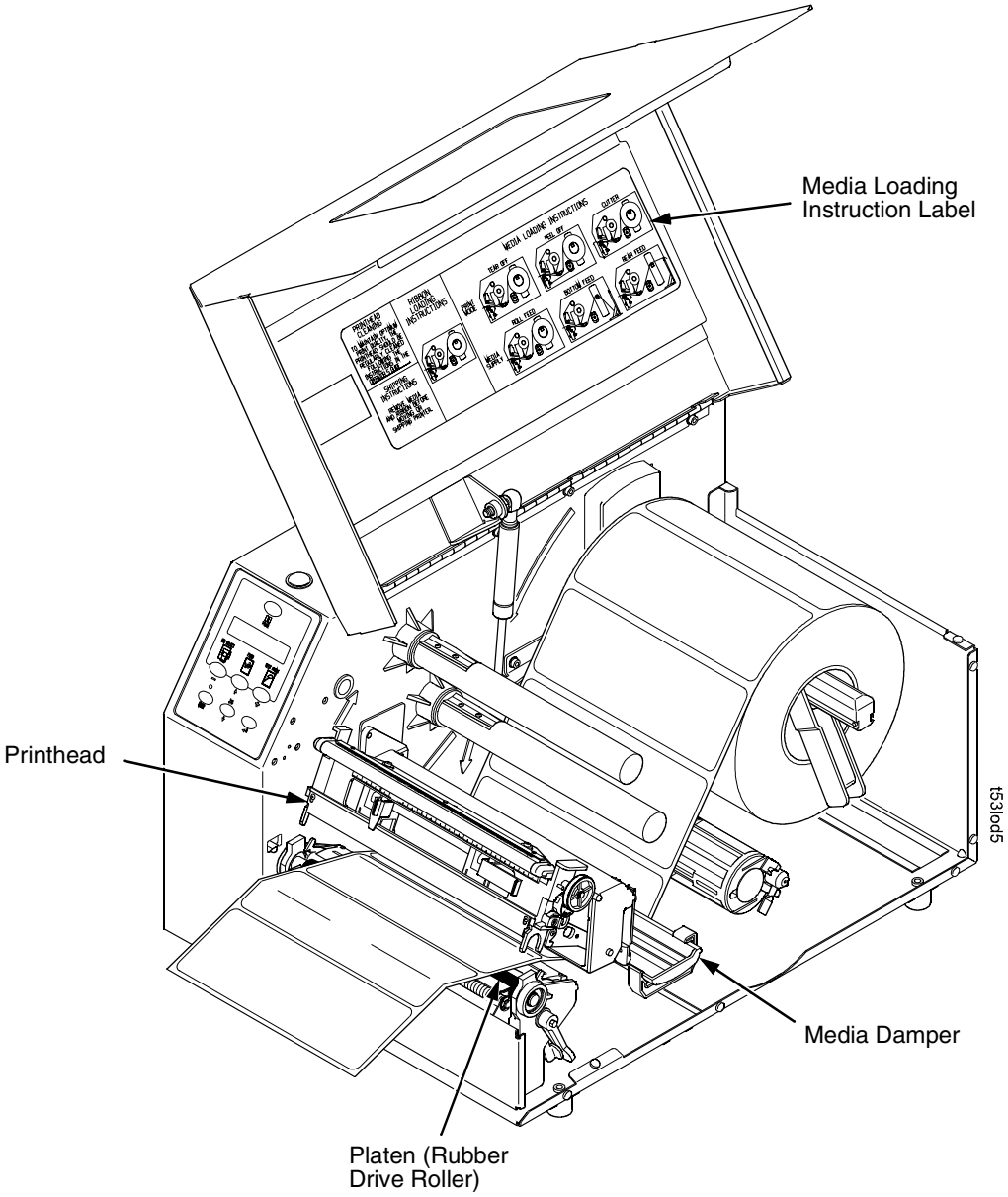
Loading Roll Media



1. Open the media cover.
2. Slide the blue media hanger guide outward to the end of the media hanger, and flip it down horizontally.
3. Open the pivoting deck by rotating the blue deck lock lever fully clockwise.
4. Slide the blue media width guide close to the outside end of the media damper.

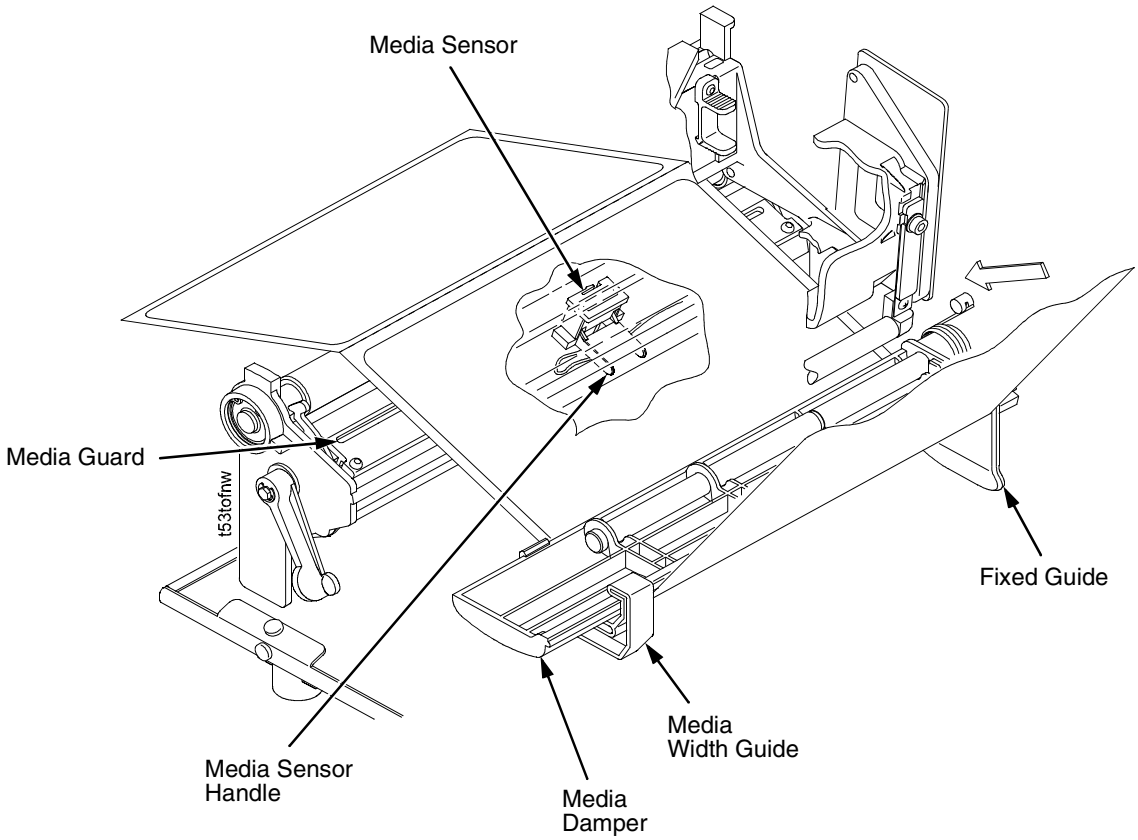


5. Slide a roll of media onto and towards the back of the media hanger. The media feeds from the top of the roll and towards the front of the printer.
6. Place the media hanger guide under the media hanger and against the lower part of the label core at a 45 degree angle (as shown). This position provides the required tension for a new label roll and the desired drag for a partial label roll.

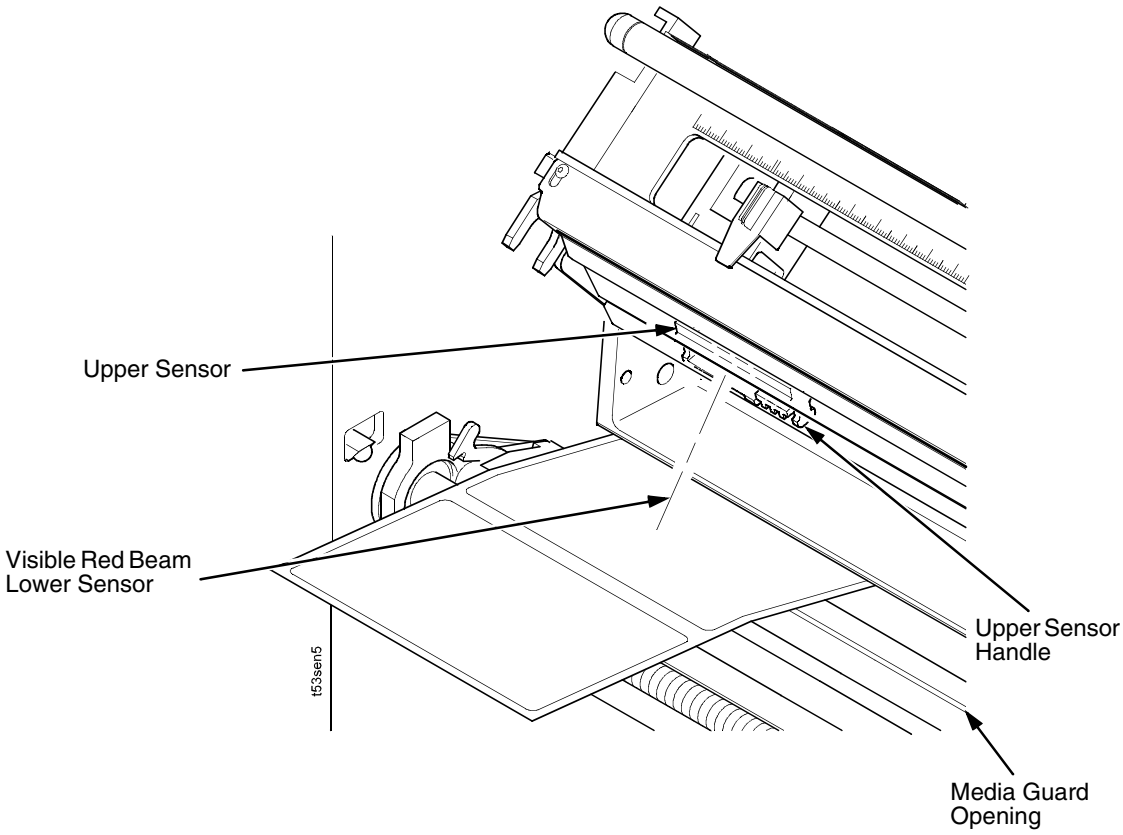


7. Thread the media under the media damper and then between the platen (rubber drive roller) and the printhead.

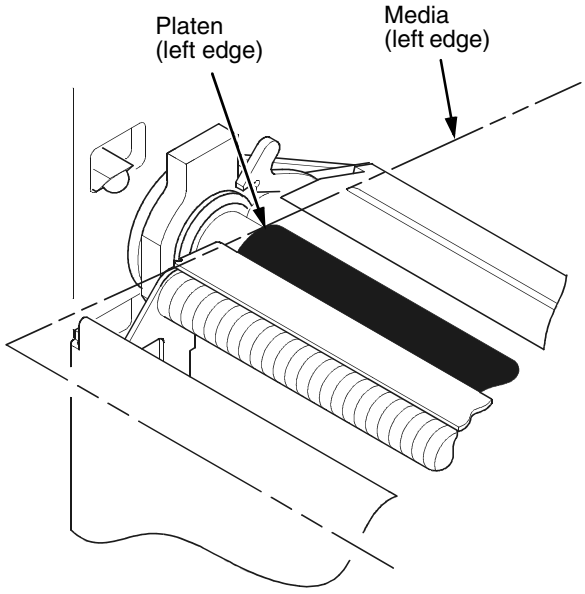
   You can also refer to the arrows on the printer frame or to the label inside the media cover for media loading instructions.



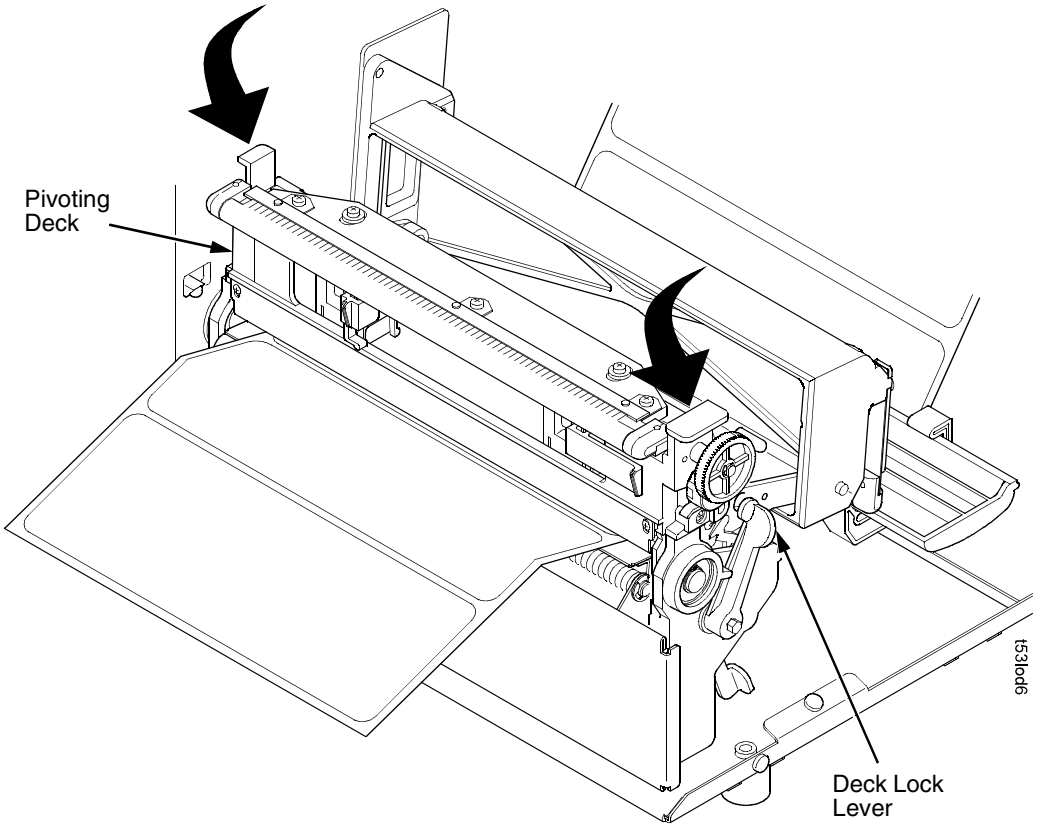
8. Verify that the left (inside) edge of the media is against the fixed guide on the bottom of the media damper.
9. Push the blue media width guide in until it is flush with the outer edge of the media.
10. Check the horizontal position of the lower media sensor (located under the media guard), and refer to “Positioning The Media Sensors” on page 68.



11. Slide the upper sensor directly over the lower sensor.



12. Align the left (inside) edge of the media with the left straight edge of the platen (rubber drive roller).



13. Close the printhead by pressing down on both sides of the pivoting deck and rotating the deck lock lever fully counterclockwise.

IMPORTANT **Ensure the pivoting deck is down and locked before attempting to advance media or print. Failure to do so will cause the "PRINTHEAD UP" fault message to display.**

14. Verify that Print Mode in the printer configuration menu is set for the media type installed (Direct or Transfer). The Print Mode submenu is located in the QUICK SETUP menu. See "Main Menu" on page 92 for details.
15. Verify the printhead pressure is properly set. See "Printhead Pressure Adjustment" on page 66.
16. Verify the pressure blocks are properly positioned. See "Printhead Pressure Block Adjustments" on page 67.
17. Verify the Gap/Mark Sensor selection matches the type of media installed. See "Sensing Different Media Types" on page 73.

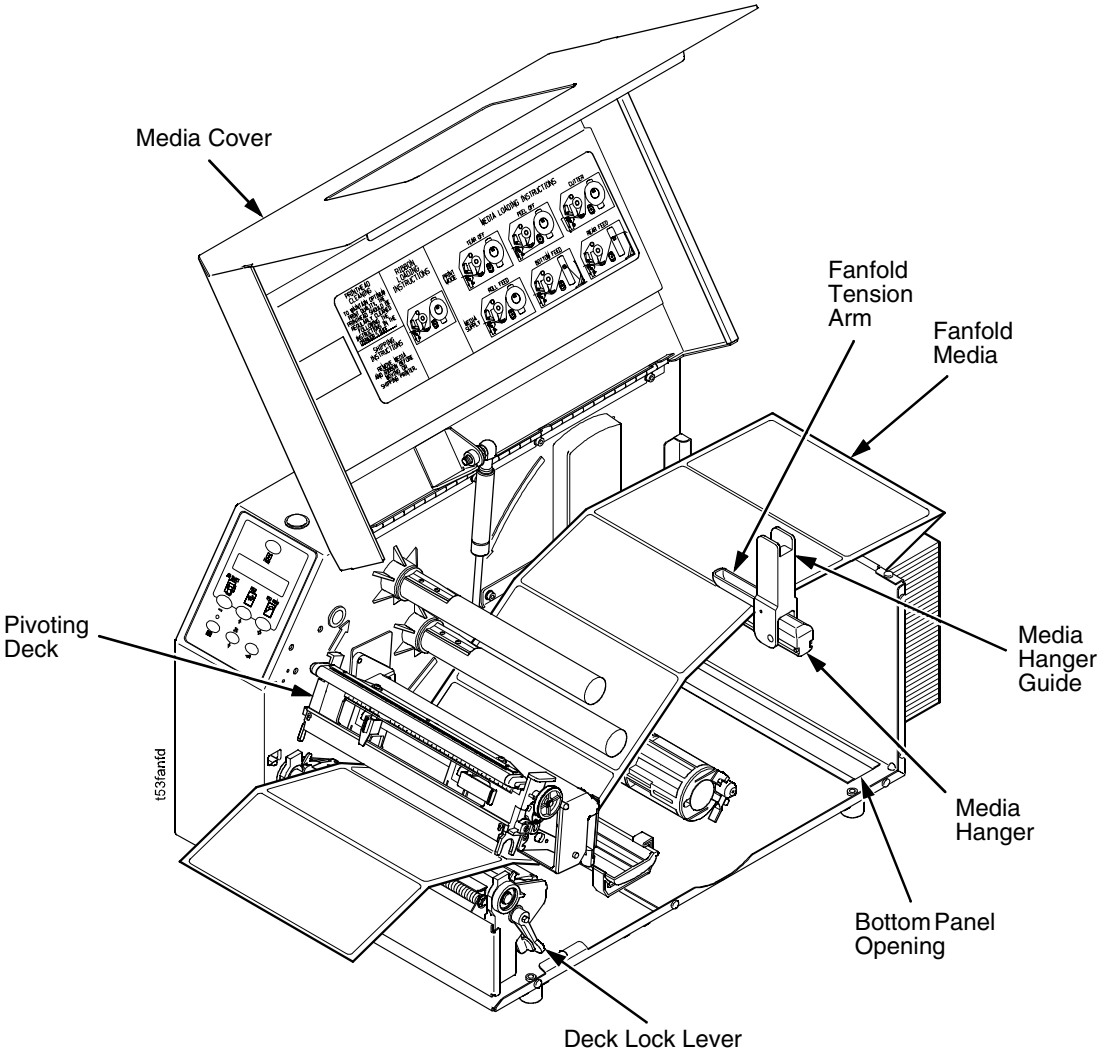
For direct thermal operation (no ribbon required):

- If you have not run an Auto Calibrate, do so now. See “Running Auto Calibrate” on page 74.
- If you have already run an Auto Calibrate, complete the following steps:
  a. Close the media cover.
  b. Press the FEED key once to verify that the media advances.
  c. Press the PAUSE key to place the printer online.

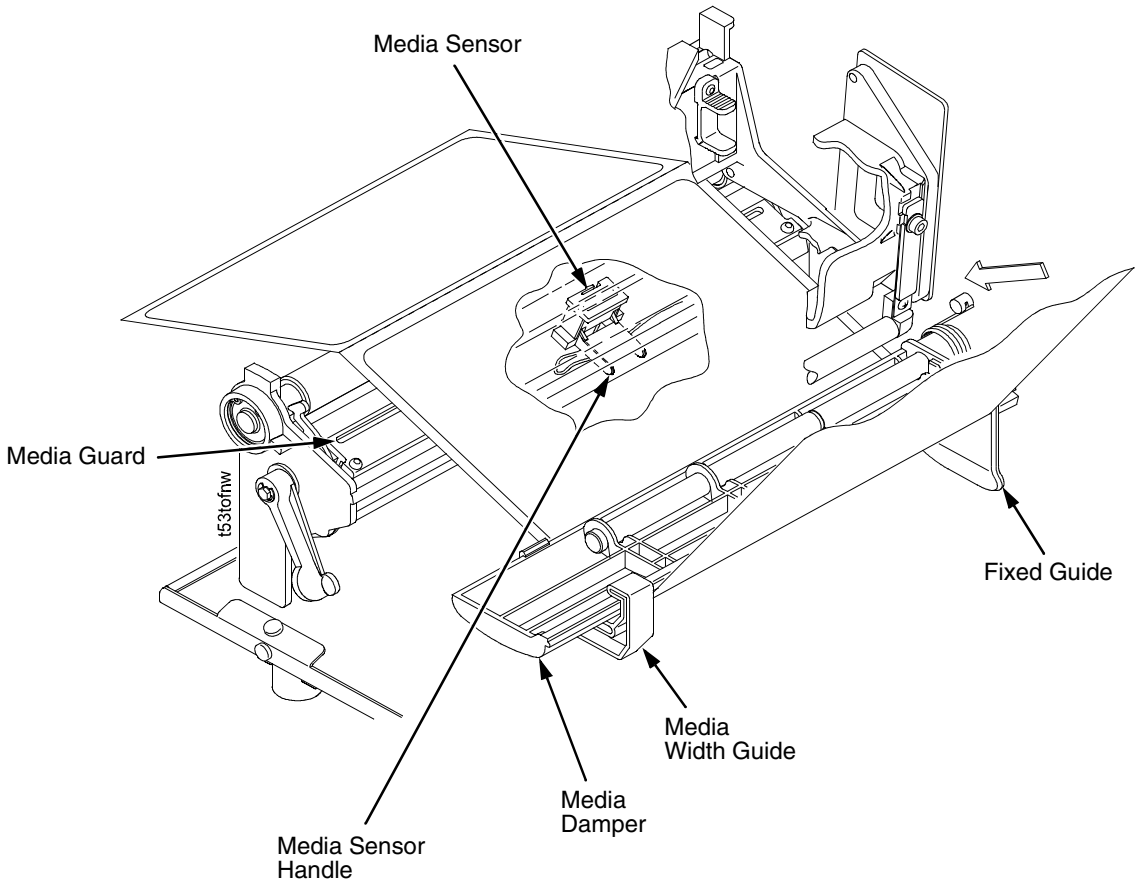
For thermal transfer operation (which uses a ribbon):

Complete the ribbon loading procedure (see “Loading Ribbon” on page 53).

Loading Fanfold Media

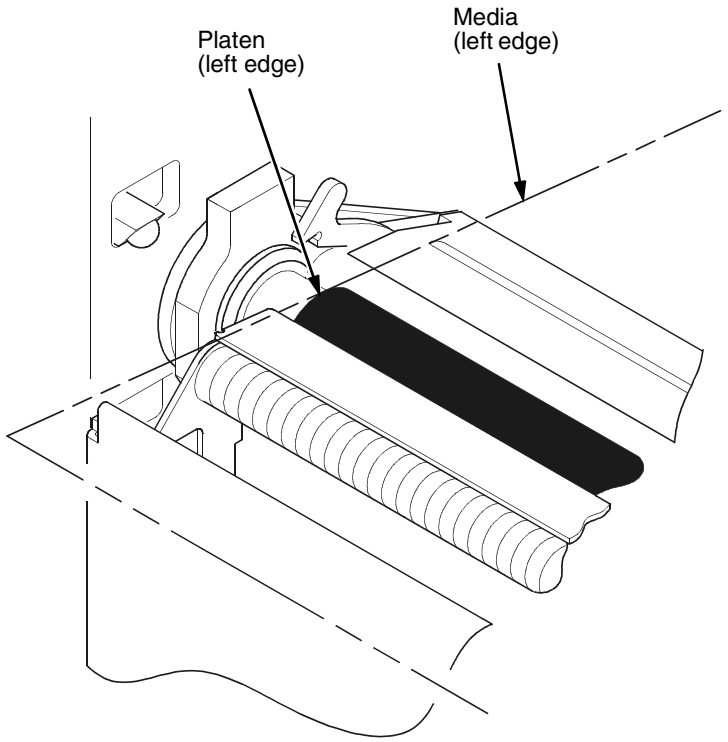


1. Open the media cover.
2. Slide the media hanger guide outward to the end of the media hanger and rotate it downward to a horizontal position to remove any roll media.
3. Place the fanfold media either behind or beneath the printer, depending on the desired fanfold supply location. Insert the first few labels through either the rear or bottom panel opening.
4. Place the media over the media hanger, flush against the back of the printer.
5. Flip up the media hanger guide and slide it in against the outer edge of the fanfold media.
6. Flip the fanfold tension arm down by pushing on it through the opening at the top of the media hanger guide.
7. Open the pivoting deck by rotating the deck lock lever fully clockwise until the deck swings upward.

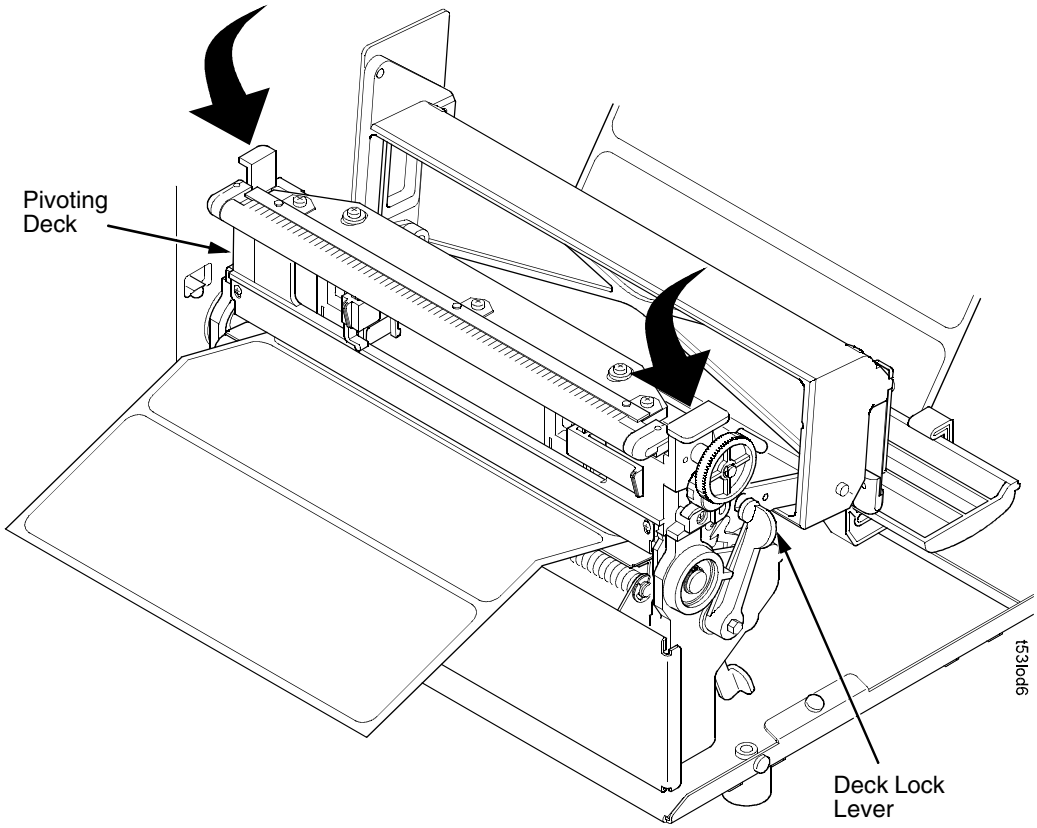


8. Slide the media width guide outward to the end of the media damper.
9. Thread the media under the media damper and then between the platen (rubber drive roller) and the printhead. You can also refer to the arrows on the printer frame or to the label inside the media cover for media loading instructions.

   Verify that the left (inside) edge of the media is against the fixed guide on the bottom of the media damper.
10. Slide the media width guide inward against the outer edge of the media.
11. Check the horizontal position of the lower media sensor (located under the media guard), and refer to “Positioning The Media Sensors” on page 68.



12. Align the left (inside) edge of the media with the left straight edge of the platen (rubber drive roller).



13. Close the printhead by pressing down on both sides of the pivoting deck and rotating the deck lock lever fully counterclockwise. This locks the pivoting deck and printhead assembly into the printing position.

IMPORTANT **Ensure the pivoting deck is down and locked before attempting to advance media or print. Failure to do so will cause the "PRINTHEAD UP" fault message to display.**

14. Verify that Print Mode submenu is set for the media type installed (direct or transfer). The Print Mode submenu is located in the QUICK SETUP menu. See "Main Menu" on page 92 for more information. Also, if thermal transfer media is installed, see "Loading Ribbon" on page 53.
15. Verify the printhead pressure is properly set. See "Printhead Pressure Adjustment" on page 66.
16. Verify the pressure blocks are properly positioned. See "Printhead Pressure Block Adjustments" on page 67.
17. Verify the Gap/Mark Sensor selection matches the type of media installed. See "Sensing Different Media Types" on page 73.

For direct thermal operation (no ribbon required):

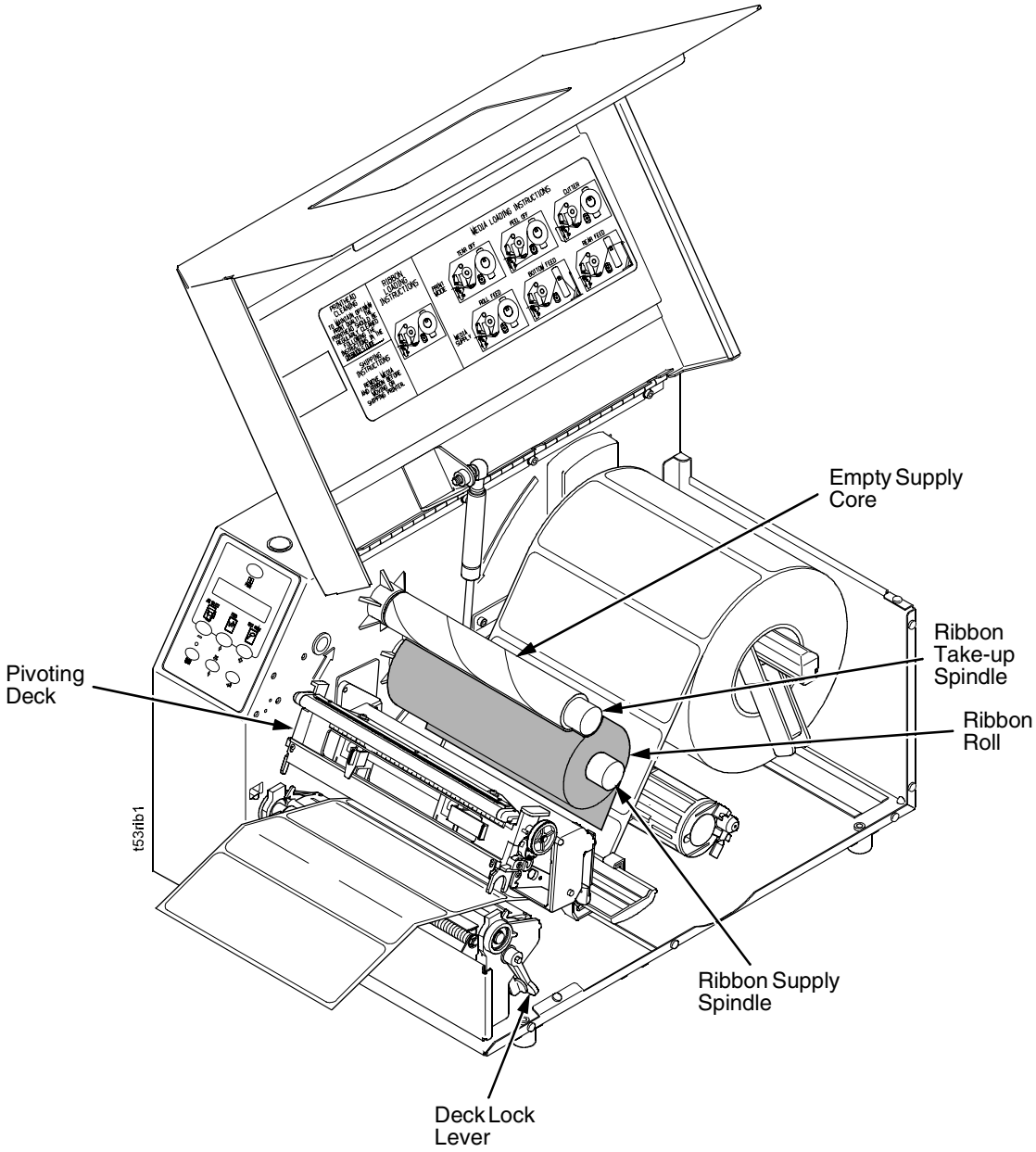
- If you have not run an Auto Calibrate, do so now. See “Running Auto Calibrate” on page 74.
- If you have already run an Auto Calibrate, complete the following steps:
  a. Close the media cover.
  b. Press the FEED key once to verify that the media advances.
  c. Press the PAUSE key to place the printer online.

For thermal transfer operation (which uses a ribbon):

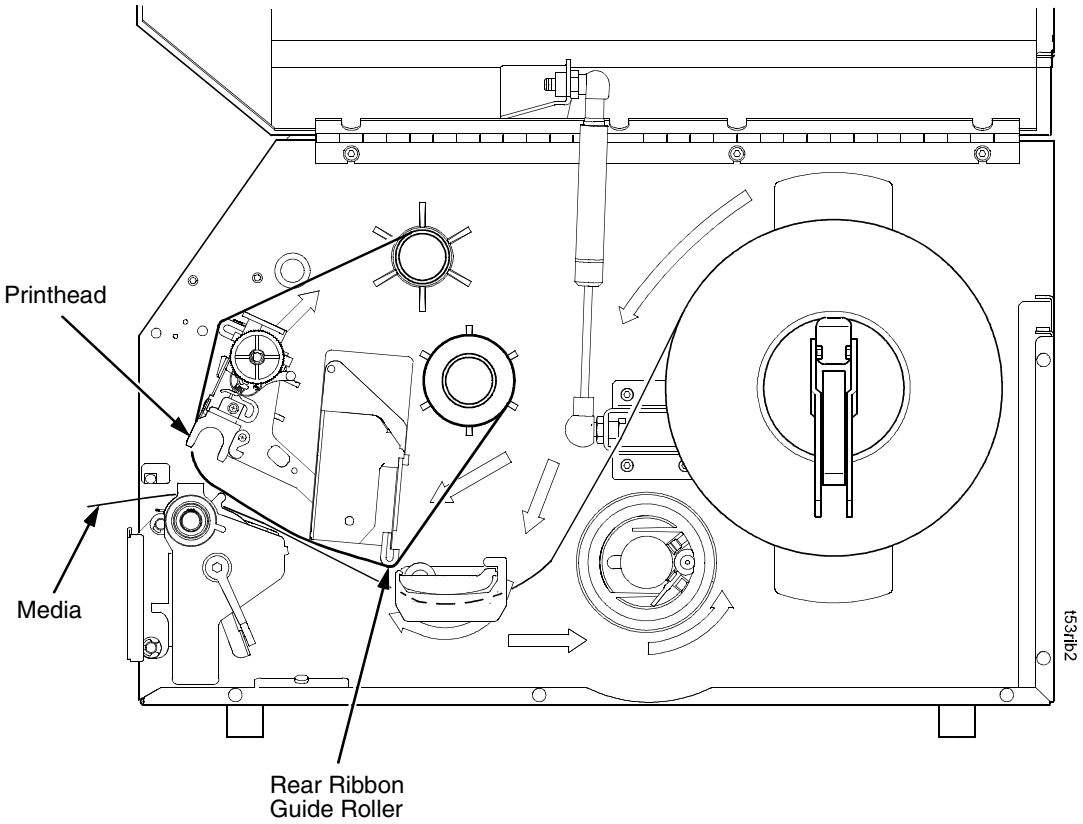
Complete the ribbon loading procedure (see “Loading Ribbon” on page 53).

Loading Ribbon

Skip this section for 4 inch DT models or when using direct thermal printing.

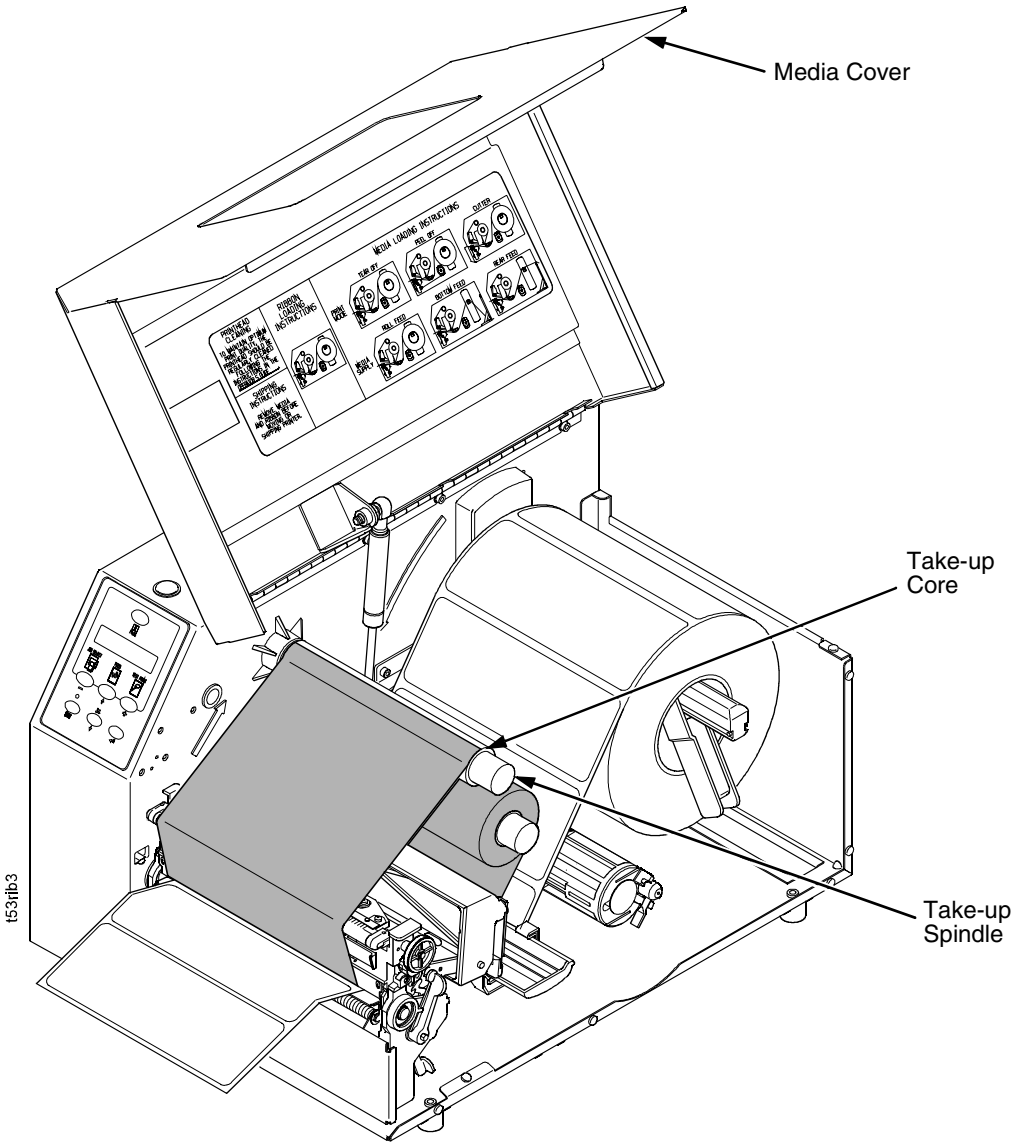


1. Install the empty ribbon supply core onto the take-up spindle.
2. Slide the ribbon roll onto the ribbon supply spindle until it stops against the spindle flange.
3. Open the pivoting deck by rotating the deck lock lever fully clockwise until the deck swings upward.



4. Thread the end of the ribbon under the rear ribbon guide roller, then between the platen and the printhead.

   You can also refer to the arrows on the printer frame or to the label inside the media cover for media loading instructions.



5. Wrap the ribbon from the front of the printhead assembly to the front of the ribbon take-up spindle. Attach the ribbon to the fiberboard core on the ribbon take-up spindle with tape.

   When installing a new roll of ribbon, attach the ribbon leader adhesive strip to the ribbon take-up core. Manually rotate the spindle clockwise to feed the unusable portion of the ribbon leader around the take-up spindle.

IMPORTANT **Do not attach the ribbon to the ribbon take-up spindle without a core installed. Proper ribbon tension and ribbon removal is based on the use of a fiberboard core.**

6. Close the pivoting deck (see page 51).

7. Verify that Print Mode (in the QUICK SETUP menu) is set for Transfer. See “QUICK SETUP” on page 100 for more information.
8. If you have not run an Auto Calibrate with this media and ribbon, do so now. See “Running Auto Calibrate” on page 74.
9. Press the FEED key once to verify that the media and ribbon advance.
10. Press the PAUSE key to place the printer online.
11. Close the printer media cover if the rewinder is not needed.

Using The Optional Internal Rewinder

The printer can be set up to rewind labels after they have been printed (Batch Rewind Mode) or to automatically peel labels from their backing and dispense them one at a time while rewinding the liner (Peel-Off Mode). Both modes require an internal rewinder, which is available as a factory installed option only.

Batch Rewind Mode

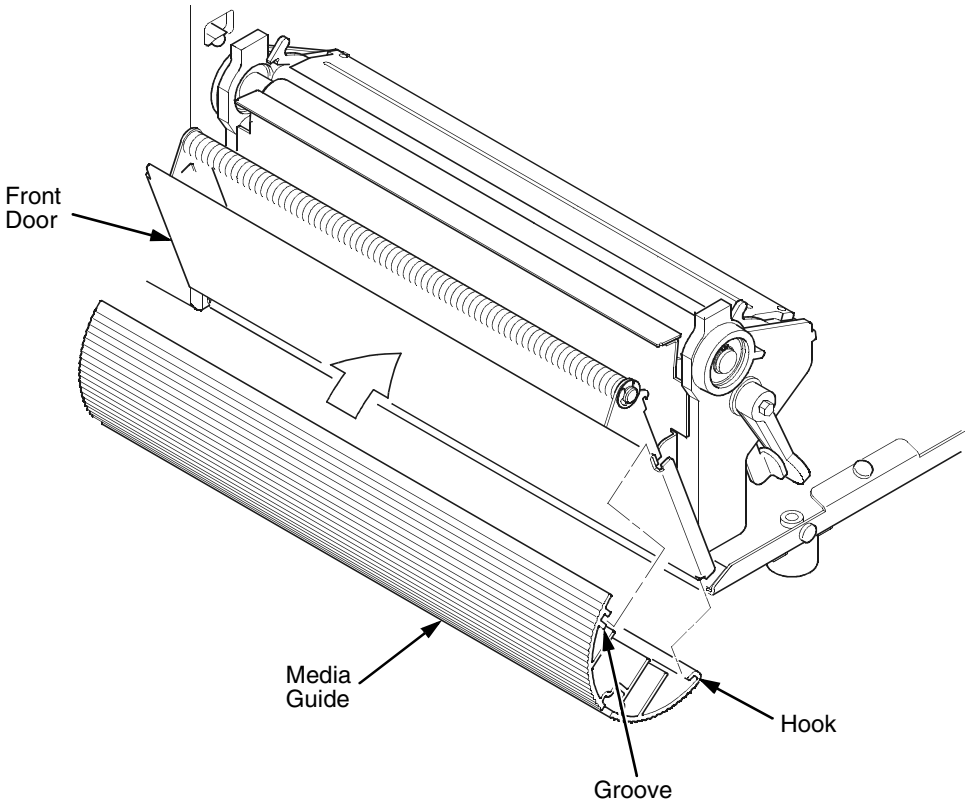
Batch Rewind allows you to automatically rewind printed labels into a roll using the optional internal rewinder.

Configuring the Printer Menu

1. Set Media Handling to “Continuous” under the QUICK SETUP menu. (See Chapter 3, “Configuring The Printer” for more information.)
2. Press the PAUSE key until “OFFLINE” displays.

Installing The Media Guide

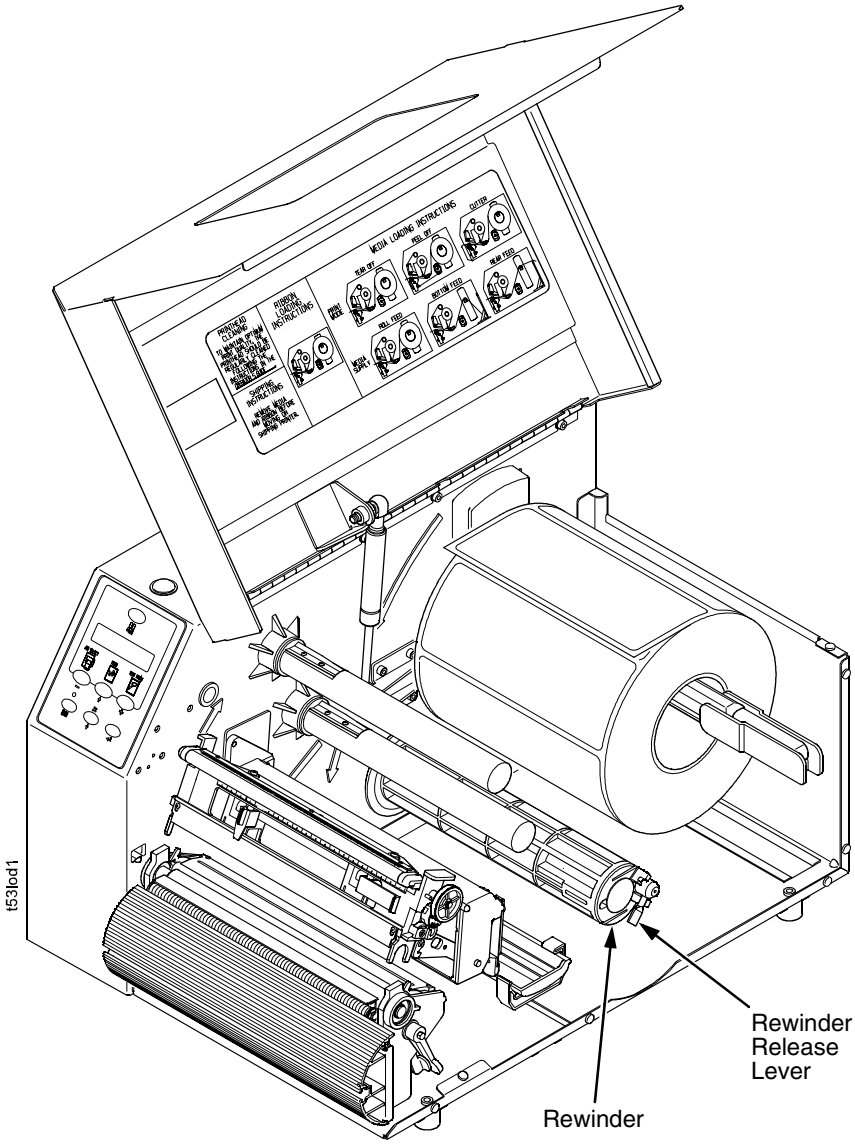
The media guide must be installed when using Batch Rewind mode.



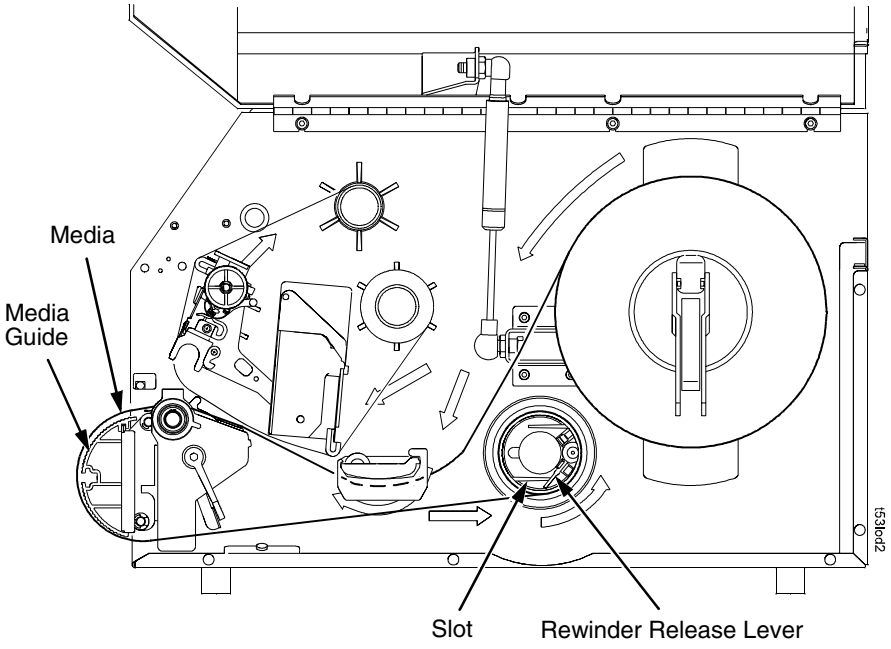
To install the media guide:

1. Open the front door by pulling it upwards, then forward.
2. The bottom of the plastic media guide is shaped like a hook and the top has a groove:
   a. Hook the bottom of the media guide under the bottom edge of the front door.
   b. Snap the groove on the media guide to the top edge of the front door.
3. Close the front door.

Loading Media

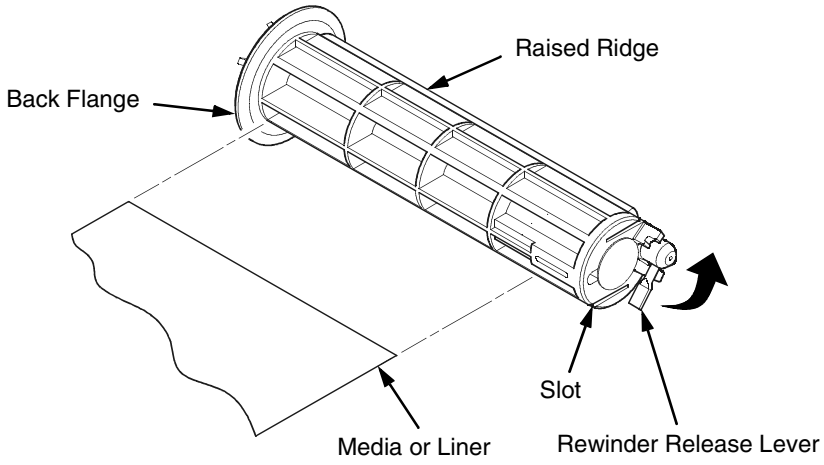


1. To load media, refer to “Loading Roll Media” on page 41 and complete steps 1 through 10.

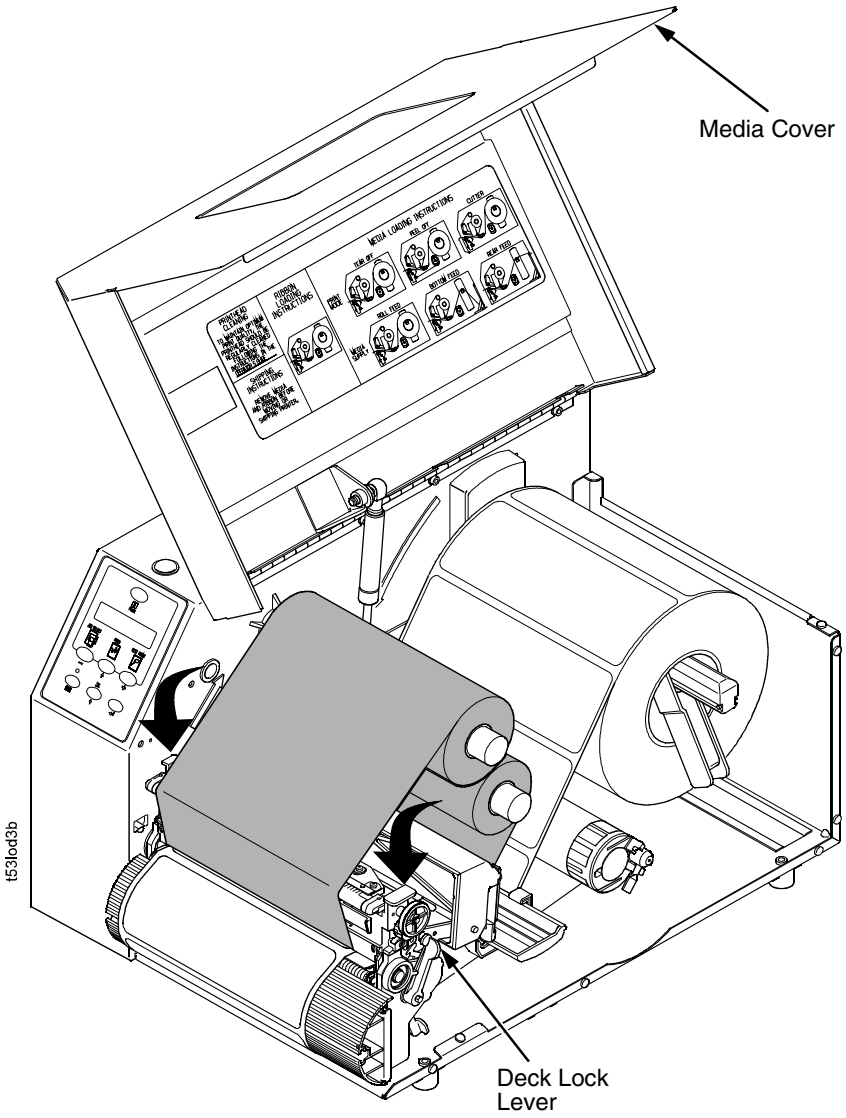


2. Thread the media over the front of the media guide and through the opening under the front door toward the internal rewinder.

IMPORTANT **If you do not complete the following step, it will be extremely difficult to remove the printed labels from the rewinder.**



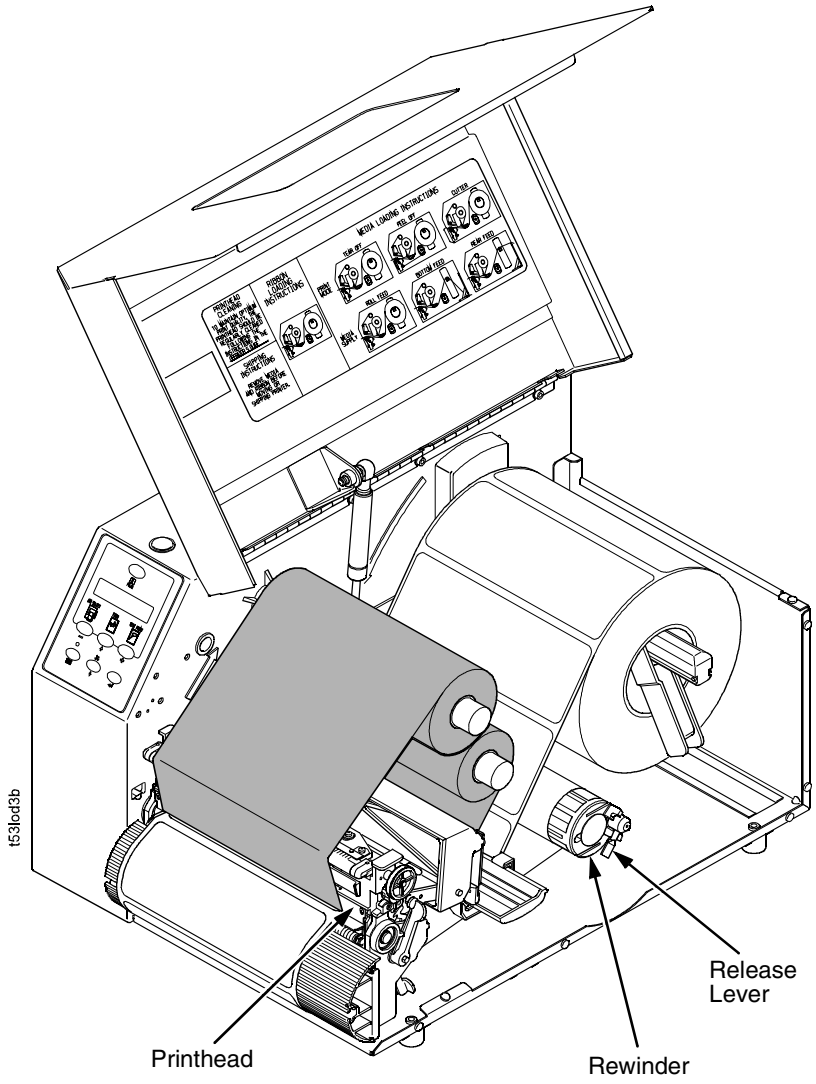
3. Turn the release lever on the rewinder counterclockwise and lock it in place. This forms a raised ridge along the width of the rewinder.
4. Insert the leading edge of the media into the closest slot of the rewinder, and slide the media against the back flange.
5. Hold the media edge in the slot and manually rotate the rewinder one full revolution counterclockwise until the media is taut.



6. Press down on both sides of the pivoting deck and rotate the deck lock lever counterclockwise against its stop to place the printhead assembly into the printing position.
7. Press the FEED key to advance the media to the next TOF (Top-of-Form) position.
8. Press the PAUSE key until “ONLINE” displays.
9. Close the media cover.

IMPORTANT **The rewinder supports a maximum diameter of five inches of printed labels. Exceeding this diameter can cause printed labels to rub on the bottom pan.**

Removing Printed Media from the Rewinder



1. Open the media cover.
2. Press the FEED key to advance the last printed label past the printhead, and tear the liner from behind the last printed label.
3. Manually rewind the remaining printed labels onto the rewinder by turning the rewinder counterclockwise.
4. Turn the release lever on the rewinder clockwise.
5. Slide the roll of printed labels off the rewinder.

Label Peel-Off

You can set up the printer to automatically peel die-cut labels off their liner (backing) and dispense them one at a time while rewinding the liner.

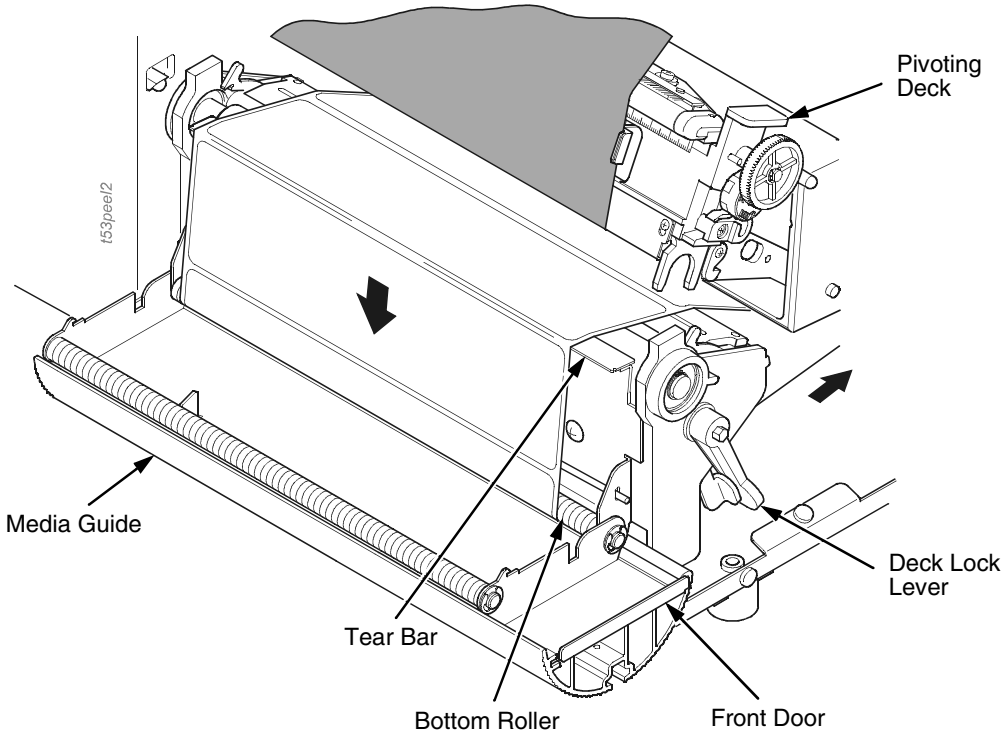
You can install the media guide to prevent long labels from accidentally adhering to the front door assembly, but it is normally not needed when using labels less than two inches long (see “Installing The Media Guide” on page 57).

Configuring the Printer Menu

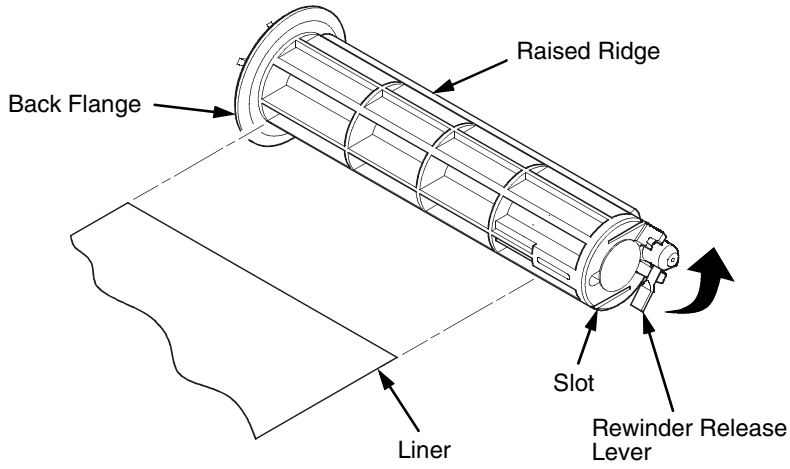
1. Set Media Handling to “Peel-Off” under the QUICK SETUP menu. (See Chapter 3, “Configuring The Printer” for more information.)
2. Press the PAUSE key until “OFFLINE” displays.

Loading Media

1. If you want to install the media guide to print long labels, do so now by completing the steps listed in “Installing The Media Guide” on page 57.
2. Open the media cover and refer to the Label Peel-Off illustration on the Ribbon and Media Loading instruction label on the inside of the cover.

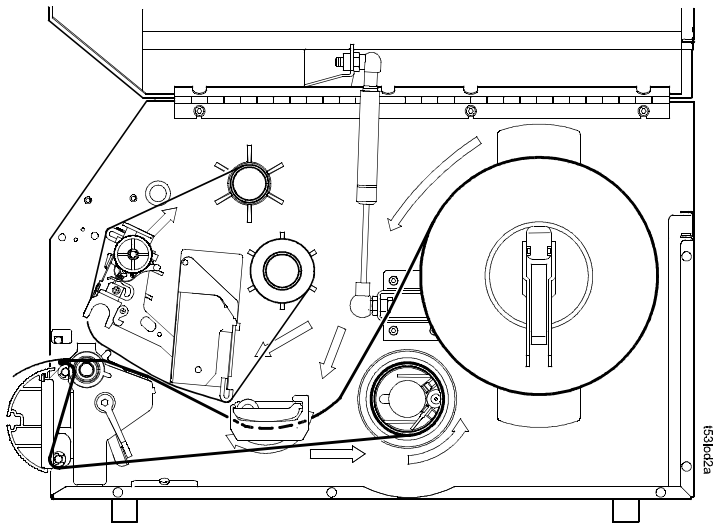


3. Open the front door by pulling it upward, then forward.
4. Open the pivoting deck by rotating the deck lock lever clockwise until the deck swings upward.
5. Thread the media (label and liner) over the tear bar and around the bottom roller, then through the opening at the bottom of the front door and into the printer.

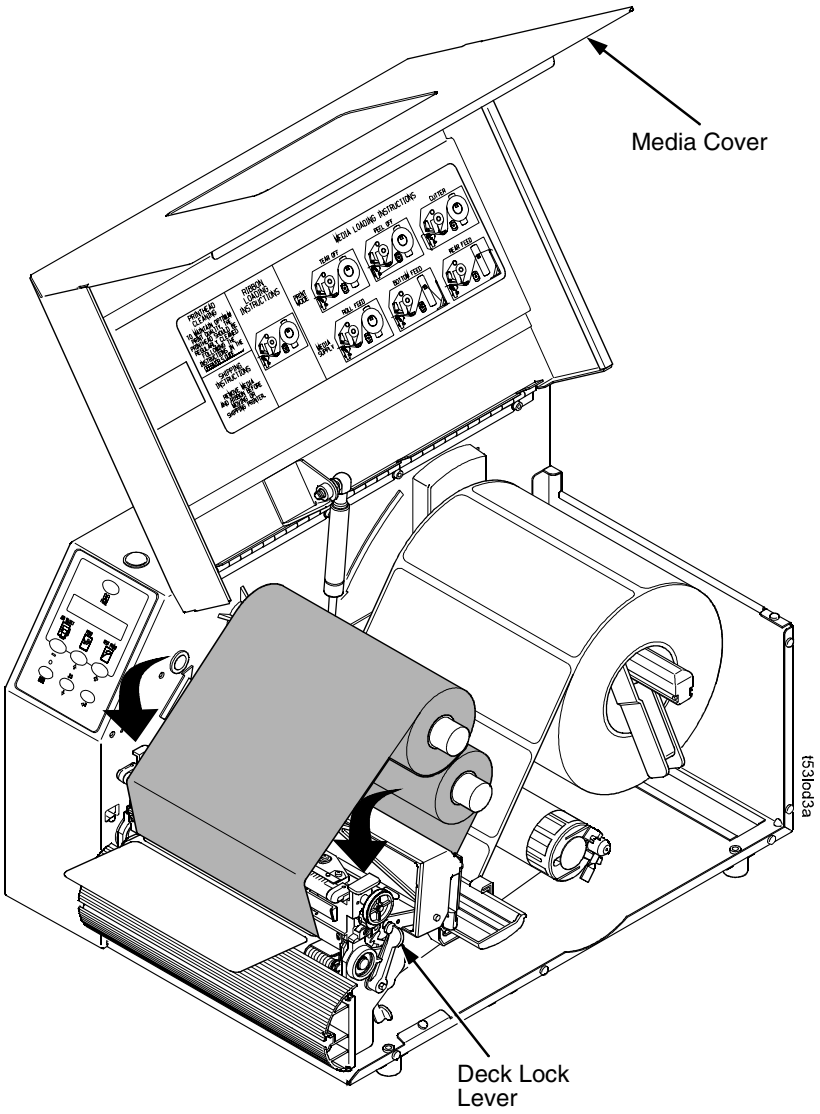


IMPORTANT **If you do not complete the following step, it will be difficult to remove the liner from the rewinder.**

6. Turn the release lever on the rewinder counterclockwise and lock it in place. This forms a raised ridge along the width of the rewinder.
7. Insert the leading edge of the media into the closest slot of the rewinder, and slide the media against the back flange.
8. Hold the media in the slot and rotate the rewinder one full revolution counterclockwise until the media is taut.
9. Remove labels from the liner so that behind the tear bar the liner is void of labels for about 1.5 inches and below the tear bar for about 2 inches.
10. Close the front door.



11. Complete the media routing as shown above.



12. Press down on both sides of the pivoting deck and rotate the deck lock lever fully counterclockwise.
13. Press the FEED key. The label advances to the peel-off position, and “Remove Label” displays on the LCD.
14. Manually remove the peeled label from the printer.
15. Press the PAUSE key until “ONLINE” displays.
16. Close the media cover.

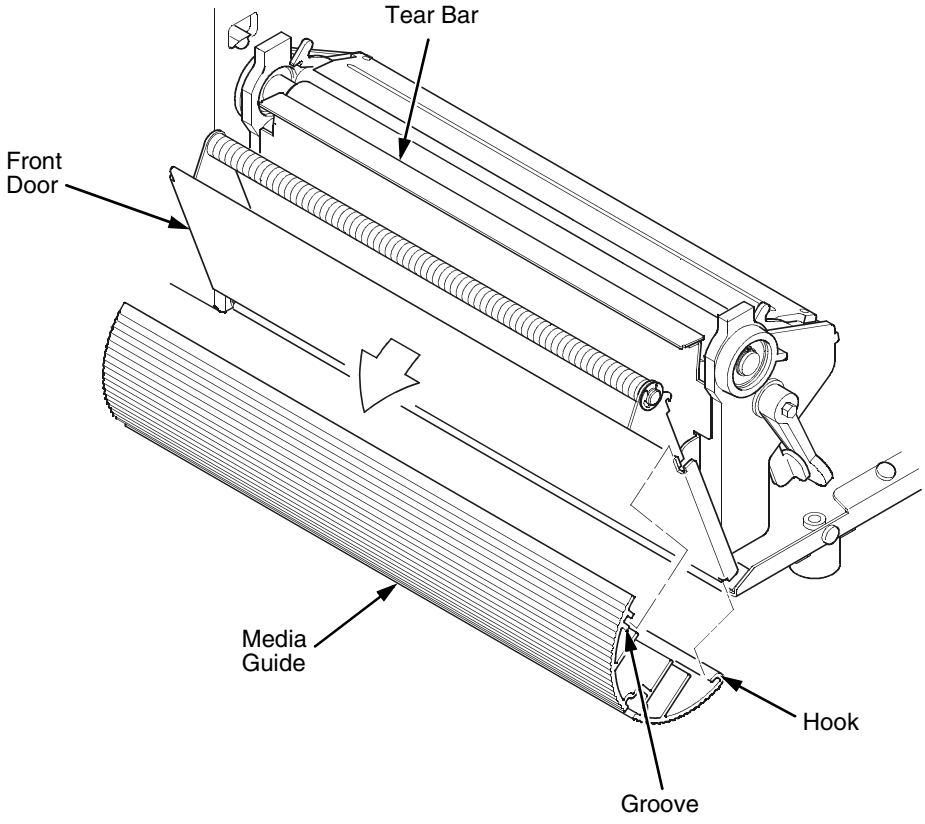
IMPORTANT **The rewinder supports a maximum diameter of 5 inches of liner. Exceeding this diameter can cause the liner to rub on the bottom pan. The rewinder is designed to support the full amount of liner from a standard 8 inch diameter media roll.**

Removing Label Liner from the Rewinder

1. Open the media cover.
2. Open the front door.
3. Tear the liner at the tear bar.
4. Manually rewind the remaining liner onto the rewinder by turning the rewinder counterclockwise.
5. Turn the release lever on the rewinder clockwise.
6. Slide the roll of label liner off the rewinder and discard.

Removing The Media Guide

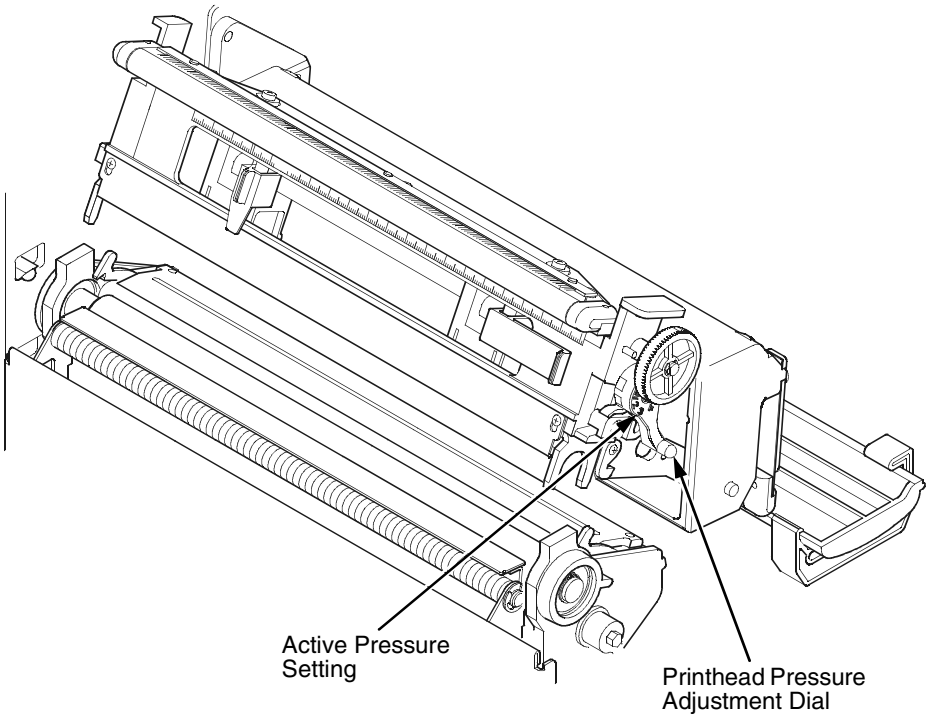
Remove the media guide from the front door when using Tear-Off or Tear-Off Strip media handling, because you will need to tear the label downward against the tear bar.



1. Open the front door by pulling it upward, then forward.
2. Grasp the upper right corner of the media guide and pry it off of the top of the front door.
3. After removing the media guide, close the front door.
4. Open the pivoting deck and load paper and ribbon normally (see “Loading Media And Ribbon” on page 40).

Printing Adjustments

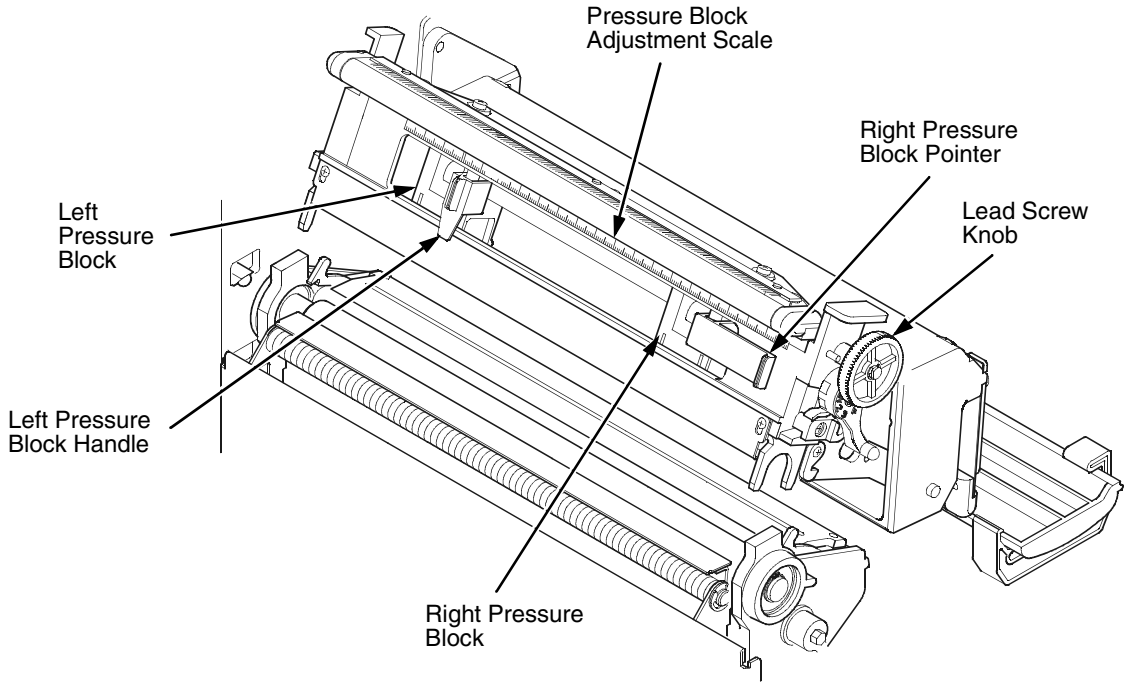
Printhead Pressure Adjustment



Sometimes you will need to adjust printhead pressure because of variations in media thickness and width. The printhead pressure adjustment dial is shown above. The value shown at the bottom of the dial is the active setting.

In general, adjust printhead pressure to the lowest value which produces the desired print quality. Die cut labels usually require a setting of 4, while heavy stock requires a setting of 6 to max. The numbers on the printhead pressure adjustment lever are relative only and do not indicate a specific printhead pressure or media thickness. By following this procedure, you will minimize printhead wear.

Printhead Pressure Block Adjustments



Printhead pressure block adjustments are used to obtain a uniform print density across the width of the installed media under a variety of media and ribbon conditions.

Left Pressure Block

Under normal printing conditions, the left block should be set with its handle aligned with the bold mark on the pressure block adjustment scale. When using media or ribbon widths less than one-third the printer's maximum printing width, you may need to manually slide the left pressure block further to the left.

Right Pressure Block

The right pressure block should be positioned with its pointer (handle on 4 inch printer models) near the right edge of the media or ribbon in use. Turn the lead screw knob clockwise to move the block right or counterclockwise to move it left.

Check the pressure block positioning by printing the Grey test pattern:

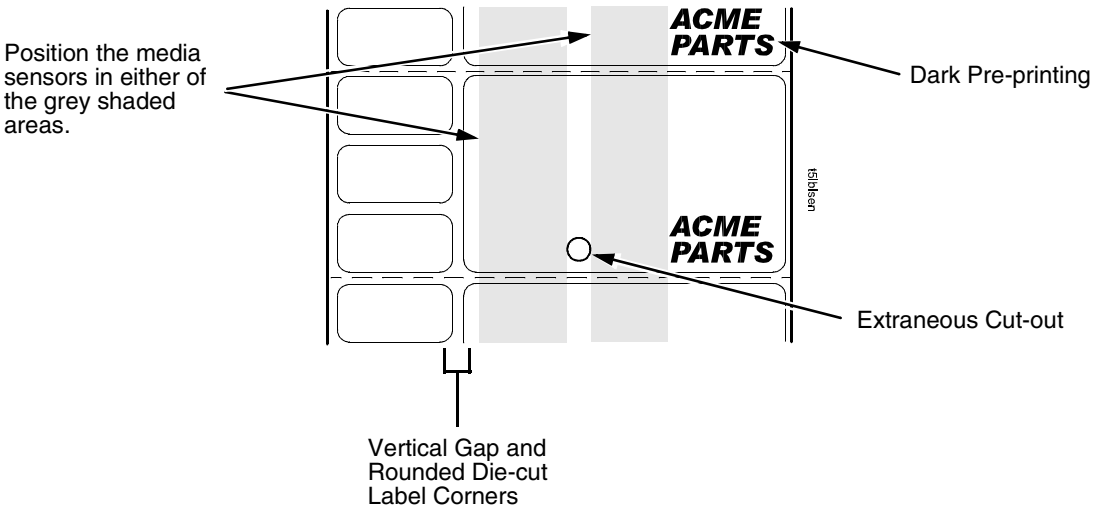
1. Press the PAUSE key until "OFFLINE" appears on the LCD.
2. Press the TEST PRINT key until "Printer Tests/Grey" displays.

3. Press the ↵ key to start the Grey test pattern. The pattern will start and continue to print.
4. Press ↵ again to stop printing.
5. Check the test pattern. If necessary reposition the pressure blocks to obtain a uniform print density across the media width. In most cases, only the right pressure block may need to be adjusted.
6. Whenever you reposition a pressure block, run the Grey test pattern to verify the print pattern is acceptable.

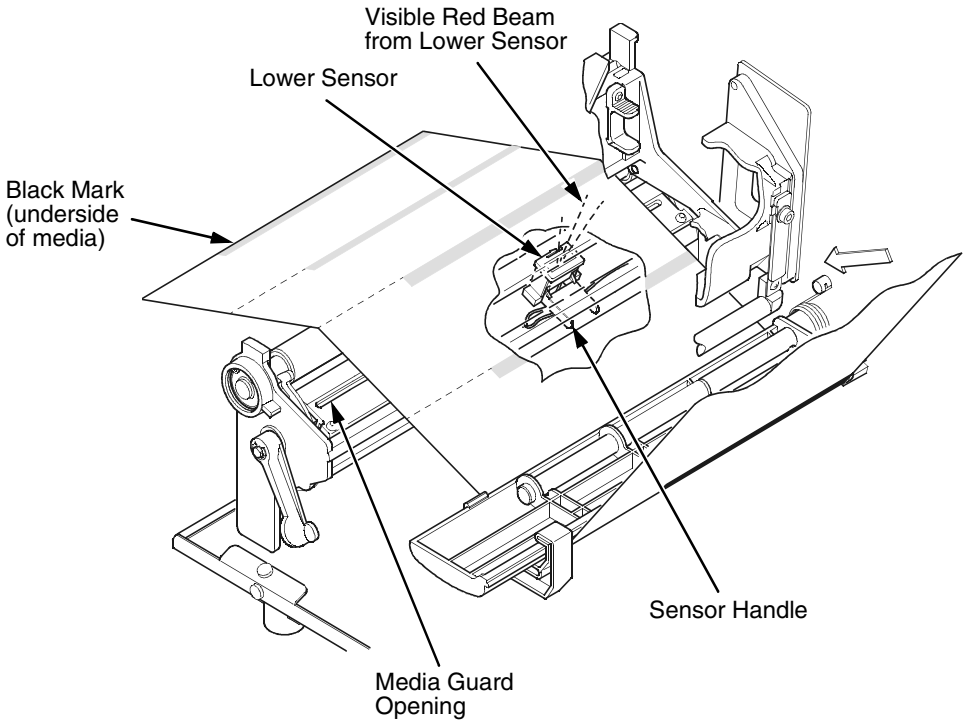
Positioning The Media Sensors

Your printer is equipped with upper and lower media sensors that detect the top-of-form position on media with label length indicators (gaps, notches, holes, or black marks). These sensors also detect when a Paper Out condition exists.

The media sensors should not be placed in the path of media features that could cause false gap detection or paper out faults. Such features are dark pre-printing, rounded die-cut label corners, vertical gaps associated with side-by-side labels, and extraneous cut-outs, as shown below.


Position the media sensors in either of the grey shaded areas.
ACME PARTS
ACME PARTS
Dark Pre-printing
Extraneous Cut-out
Vertical Gap and Rounded Die-cut Label Corners

Sensing Media with Horizontal Black Marks (Mark) or Media with No Label Length Indicators (Disable)



Sensing Media with Horizontal Black Marks

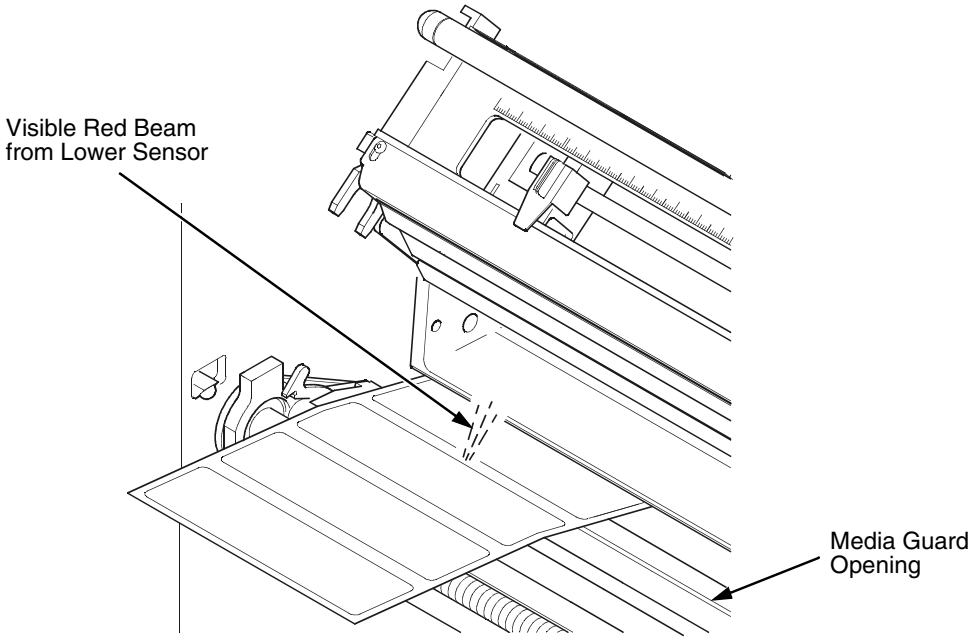
Position the lower media sensor for detecting horizontal black marks located on the underside of media, and position the upper sensor above the lower sensor to provide a consistent background.

1. Check the position of the sensor by looking through the long, narrow opening in the media guard. Use the visible red light emitting from the lower sensor as a reference pointer.
2. Use the sensor handle to manually position the sensor to the center of the black mark on the media.
3. Select “Mark” in the Gap/Mark Sensor submenu under the CALIBRATE CTRL menu. See “Sensing Different Media Types” on page 73.
4. Perform an Auto Calibrate. See “Running Auto Calibrate” on page 74.

Sensing Media with No Label Length Indicators

1. When using media without label length indicators (no gaps, notches, holes, or marks) or when you want to ignore all existing length indicators, place the lower sensor in the center of the media so it can detect when a Paper Out condition exists. Also set the upper sensor above it.
2. Select “Disable” in the Gap/Mark Sensor submenu under CALIBRATE CTRL. See “Sensing Different Media Types” on page 73.
3. Perform an Auto Calibrate. See “Running Auto Calibrate” on page 74.

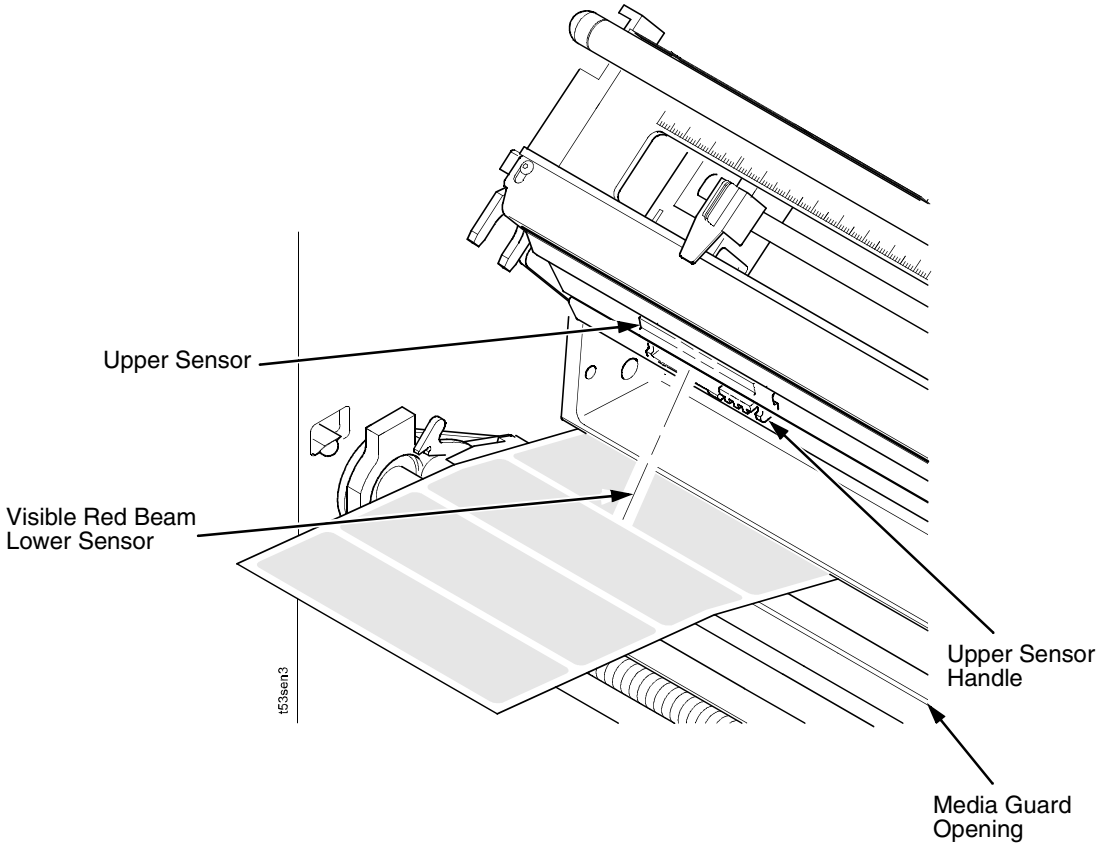
Sensing Media with Gaps, Notches, or Holes (Gap)



Position the lower media sensor for detecting gaps, notches, or holes in media with a white background. Place the upper sensor above the lower sensor to provide a consistent background.

1. Position the lower sensor directly under the center of the gap, notch, or hole.
2. Check the position of the lower sensor by looking through the long, narrow opening in the media guard. Use the visible red light emitting from the lower sensor as a reference pointer.
3. Use the sensor handle to manually position the sensor to the center of the gap, notch, or hole in the media.
4. Select “Gap” in the Gap/Mark Sensor submenu under the CALIBRATE CTRL menu. See “Sensing Different Media Types” on page 73.
5. Perform an Auto Calibrate. See “Running Auto Calibrate” on page 74.

Sensing Media with Dark Background Labels with Gaps (Advanced Gap)



NOTE: Ribbon is not displayed in this illustration. The upper and lower sensors are designed to function with or without ribbon installed.

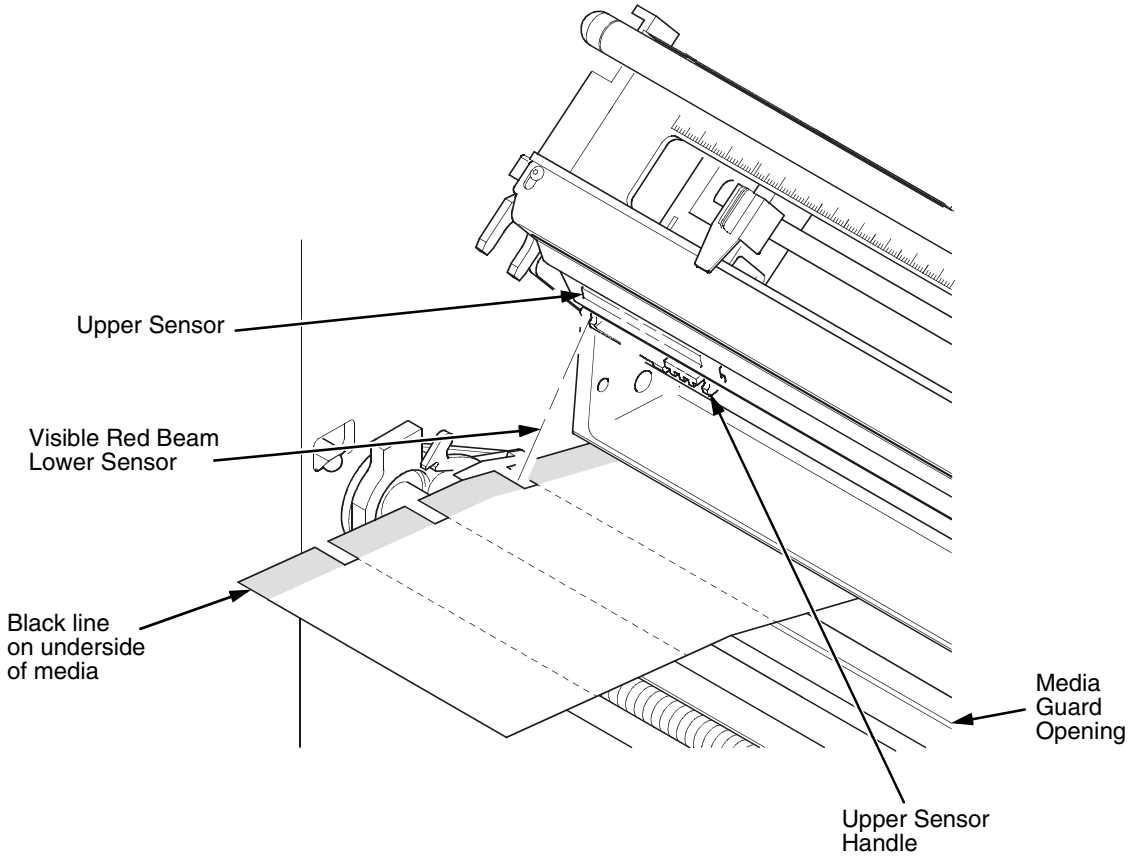
The upper sensor and lower sensor are used together to detect liner gaps between die cut labels that have a black or dark background on white or clear liner.

1. Position the lower sensor directly under the center of the gap, and then place the upper sensor directly over the lower sensor.
2. Check the position of the lower sensor by looking through the long, narrow opening in the media guard. Use the visible red light emitting from the lower sensor as a reference pointer.
3. Use the sensor handle to manually position the sensor to the center of the gap in the media. Then use the handle on the upper sensor to position it directly above the lower sensor.

NOTE: When using ribbon, you may need to slide the ribbon to one side to adjust the upper sensor.

4. Select “Advanced Gap” in the Gap/Mark Sensor submenu under the CALIBRATE CTRL menu. See “Sensing Different Media Types” on page 73.
5. Perform an Auto Calibrate. See “Running Auto Calibrate” on page 74.

Sensing Dark Background Media with Notches or Holes (Advanced Notch)



NOTE: Ribbon is not displayed in this illustration. The upper and lower sensors are designed to function with or without ribbon installed.

The upper sensor and lower sensor are used together to detect notches or holes in media with a black or dark underside. This combination can be found on tag stock that has a black vertical line along one edge on the underside of the label, interrupted by a notch or hole used as the label length indicator.

1. Position the lower sensor directly under the center of the notch or hole, and then place the upper sensor directly over the lower sensor.
2. Check the position of the lower sensor by looking through the long, narrow opening in the media guard. Use the visible red light emitting from the lower sensor as a reference pointer.
3. Use the sensor handle to manually position the sensor to the center of the notch or hole in the media. Then use the handle on the upper sensor to position it directly above the lower sensor.

NOTE: When using ribbon, you may need to slide the ribbon to one side to adjust the upper sensor.

4. Select “Advanced Notch” in the Gap/Mark Sensor submenu under the CALIBRATE CTRL menu. See “Sensing Different Media Types” on page 73.
5. Perform an Auto Calibrate. See “Running Auto Calibrate” on page 74.

Sensing Different Media Types

The printer's media sensors can detect the different types of label length indicators on a large variety of media types. This is accomplished by selecting the correct sensor option: Gap, Mark, Advanced Gap, Advanced Notch, or Disable under Gap/Mark Sensor in the CALIBRATE CTRL menu. Figure 13 on page 339 illustrates the different media types and label length indicators used on them.

1. Press ⋮☰ to place the printer in Menu mode.
2. Press ↓ and ↵ together until "ENTER SWITCH UNLOCKED" displays.
3. Press ⋮☰ until "CALIBRATE CTRL" displays.
4. Press ↓ until "Gap/Mark Sensor/Disable*" (the currently enabled) option displays.
5. Press **+** or **-** until the option that matches the type of label length indicators on the installed media displays:
   - **Mark**. Select when using media that has horizontal black marks located on the underside of the label liner or tag stock.
   - **Gap**. Select when using media with a liner space between die-cut labels or when using tag stock with notches or holes as label length indicators on white background media.
   - **Advanced Gap**. Select when using media that has liner gaps between die cut labels with black background.
   - **Advanced Notch**. Select when using media with notches or holes that interrupt a black vertical line on the underside of the media.
   - **Disable**. Select when using media with no label length indicators (no gaps, notches, holes, or black marks) or when you want the printer to ignore all existing label length indicators on the installed media.

NOTE: When you select Disable, the length of each label is based on the Label Length value entered in the QUICK SETUP menu or the value sent via host software.

NOTE: If the printer detects a false PAPER OUT message when you change from Advanced Gap or Advanced Notch to Gap or Mark sensing or vice-versa, press the PAUSE key and run Auto Calibrate.

6. Press ↵ to enable the displayed option. An asterisk (*) appears next to the selection.
7. Press PAUSE until "OFFLINE" appears on the LCD.
8. Review "Calibrating The Media Sensors" on page 74.
9. Perform the Auto Calibrate procedure on page 74.

Calibrating The Media Sensors

Due to manufacturing differences in media and ribbon, the media sensors may have difficulty differentiating between the label and the liner or the label and the black mark. When this occurs, the printer may intermittently skip a label or display a fault message such as “GAP NOT DETECTED/See Manual” or “PAPER OUT/Load Paper.”

Media sensor sensitivity and reliability can be improved by changing the Gap/Mark Threshold and/or Paper Out Threshold values. You can change these values automatically by performing the Auto Calibrate or Manual Calibrate procedure in the CALIBRATE CTRL menu or change them manually by entering your own Gap/Mark Threshold or Paper Out Threshold values. (The changes take effect immediately within the current configuration menu.)

Auto or Manual Calibrate is completed successfully when the displayed Sensed Distance value correctly matches that of the installed media. When Gap is selected, the Sensed Distance should match the length from the trailing edge of one gap to the trailing edge of the next gap (or one label + one gap). When Mark is selected, the Sensed Distance should match the length from the leading edge of one black mark to the leading edge of the next black mark.

When you have completed Auto or Manual Calibrate, you can verify the new values are correct by pressing the FEED key several times. Each time you press FEED, media advances one label and stops at the correct Top-of-Form position of the next label.

Once you confirm the correct values, save them to the desired configuration menu before powering off the printer. See “Saving A Configuration” on page 84.

Running Auto Calibrate

You can initialize Auto Calibrate via the TEST PRINT key (described in detail below) or via the CALIBRATE CTRL or DIAGNOSTIC menus in Menu mode.

NOTE: Verify that the Gap/Mark Sensor option (Gap, Mark, Advanced Gap, Advanced Notch, or Disable) matches the installed media. See “Sensing Different Media Types” on page 73.

Check that the media sensors are horizontally positioned to permit sensing of the label length indicators. See “Positioning The Media Sensors” on page 68.

If you try to do an Auto Calibrate when Peel-Off Media Handling is enabled, the LCD will display “CANNOT CALIBRATE/Disable Peel-Off.” Before you can do an Auto Calibrate, you must select another media handling mode.

1. Press the PAUSE key until “OFFLINE” appears on the LCD.
2. Press ↓ and ↵ together until “ENTER SWITCH UNLOCKED” displays.
3. Press the TEST PRINT key until “Printer Tests/Auto Calibrate” displays.
4. Press ↵. Media advances until it can accurately detect the label length indicators and then stops at the Top-of-Form position. The Sensed Distance value will then display for one second.

5. Auto Calibrate is successful when the Sensed Distance value correctly matches that of the installed media:

   - **Gap/Mark Sensor = Gap, Advanced Gap, or Advanced Notch**: The Sensed Distance value is the physical length of one label plus the length of one gap, notch, or hole.
   - **Gap/Mark Sensor = Mark**: The Sensed Distance value is the physical distance from the leading edge of one black mark to the leading edge of the next.
   - **Gap/Mark Sensor = Disable**: Not applicable. If Gap/Mark Sensor is set to Disable, the Sensed Distance value will not be updated.

   If “GAP NOT DETECTED” displays, run Auto Calibrate again.

   If Auto Calibrate continues to end with an incorrect Sensed Distance value displayed or a fault message displayed, run Manual Calibrate as described on page 77 or see Table 17 on page 323.

NOTE: The amount of media sampled during Auto Calibrate is based on the length of a label and transitions detected, without error, between a label and its label length indicators.

6. Press the PAUSE key until “OFFLINE” displays.
7. Press the FEED key several times. Each time you press FEED, the media advances one label length and stops.

NOTE: After a form feed, the position of the leading edge of the next label depends on the type of Media Handling mode selected under the QUICK SETUP menu. Tear-Off and Tear-Off Strip Media Handling will position the label edge at the tear bar, while Continuous will position the label edge under the printhead.

8. Press the PAUSE key until “ONLINE” displays.
9. Once the Sensed Distance value is confirmed, you will need to save it to the desired configuration menu before powering off the printer. See “Saving A Configuration” on page 84.

Running Media Profile

The Media Profile printout shows the relationship of the Paper Out Threshold and the Gap/Mark Threshold values, illustrates if and when each label length indicator is detected, and shows the difference between the label length indicators and the label. The profile printout (see Figure 1 on page 76) helps you set the thresholds for difficult media. This includes pre-printed labels and labels with poor gap/media dynamic range.

Once Media Profile is initiated, the printer will continue to advance media and print the profile in landscape orientation until you press ↵ to stop printing.

NOTE: Verify the CALIBRATE CTRL menu Gap/Mark Sensor option (Gap, Mark, Advanced Gap, Advanced Notch, or Disable) matches the installed media. See “Sensing Different Media Types” on page 73.

You will need a minimum installed label width of two inches to support the Profile printout.

Ensure the media sensors are horizontally positioned to permit sensing of the label length indicators. See “Positioning The Media Sensors” on page 68.

Ensure the Print Mode option selected in the QUICK SETUP menu matches the media installed. Select “Direct” for heat sensitive media (no ribbon required) or “Transfer” for thermal transfer media (ribbon required).

1. Press ⋮☰ to place the printer in Menu mode.
2. Press ↓ and ↵ together until “ENTER SWITCH UNLOCKED” displays.
3. Press ⋮☰ until “CALIBRATE CTRL” displays.
4. Press ↓ until “Media Profile/Profile Print” displays and then press ↵. (The printer will continue to print the profile until you press ↵.)

   The printer will advance media and continue to print a dynamic profile image depicting the relationship of the label and any label length indicators detected.
5. Press ↵. The printer will stop printing.
6. Press the PAUSE key until “OFFLINE” displays.

NOTE: The Gap/Mark and Paper Out Threshold values shown on the Profile printout represent the last values determined from a successful Auto or Manual Calibrate or the factory default values if no Auto or Manual Calibrate was performed.

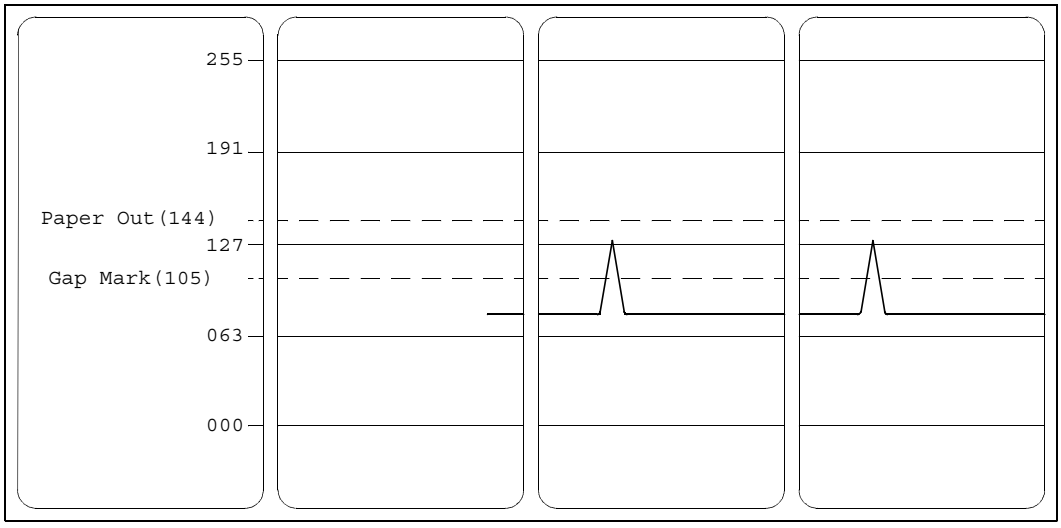


Figure 1. Media Profile Printout

Running Manual Calibrate

Manual Calibrate should be performed only when the values derived from Auto Calibrate fail to improve the media sensors' ability to sense label length indicators on the installed media. You must first enable "Admin User" in the PRINTER CONTROL menu before accessing or initializing Manual Calibrate in the CALIBRATE CTRL menu.

NOTE: Verify the Gap/Mark Sensor option (Gap, Mark, Advanced Gap, Advanced Notch, or Disable) matches the installed media. See "Sensing Different Media Types" on page 73.

Ensure the media sensors are horizontally positioned to permit sensing of the label length indicators. See "Positioning The Media Sensors" on page 68.

Ensure the Print Mode option selected in the QUICK SETUP menu matches the media installed. Select "Direct" for heat sensitive media (no ribbon required) or "Transfer" for thermal transfer media (ribbon required).

If you try to do a Manual Calibrate when Peel-Off Media Handling is enabled, the LCD will display, "CANNOT CALIBRATE/Disable Peel-Off." Before you can do a Manual Calibrate, you must select another media handling mode.

1. Press ⋮☰ to place the printer in Menu mode.
2. Press the ↓ and ↵ keys together until "ENTER SWITCH UNLOCKED" displays.
3. Press ⋮☰ until "PRINTER CONTROL" displays.
4. Press ↑ until "Admin User" displays, then press **+** until "Enable" displays.
5. Press ↵ to select Enable. An asterisk (*) appears next to "Enable."
6. Press ⋮☰ until "CALIBRATE CTRL" displays.
7. Press ↓ until "Manual Calibrate/Run Calibrate" displays, then press the ↵.
8. Follow the instructions displayed on the LCD. Example: "REMOVE RBN&MEDIA/Press Enter" indicates that you must open the pivoting deck and remove the ribbon and media from under the printhead, close and lock the pivoting deck, and press the ↵ key.
9. During the last step of Manual Calibrate, the printer will advance the media and attempt to detect the label length indicators and stop at the Top-of-Form position. The Sensed Distance value will then display for one second. The calibrate is successful when the Sensed Distance value correctly matches that of the installed media. If "CALIBRATION FAIL/See Manual" displays, run Manual Calibrate again.

NOTE: The amount of media sampled during Manual Calibrate is based on the length of a label and the transitions detected without error, between a label and its label length indicators.

10. Press the PAUSE key until "OFFLINE" displays.
11. Press the FEED key several times. Each time you press FEED, the media advances one label length and stops.

NOTE: After a form feed, the position of the leading edge of the next label depends on the type of Media Handling mode selected under the QUICK SETUP menu. Tear-Off and Tear-Off Strip Media Handling positions the label edge at the tear bar, while Continuous positions the label edge under the printhead.

12. Once the correct values are confirmed, save them to the desired configuration menu before powering off the printer. See “Saving A Configuration” on page 84.

Cleaning

Depending on the media used, the printer may accumulate residues (media dust, adhesives, etc.) as a by-product of normal printing. To maintain top printing quality, you should remove these residues by cleaning the printer periodically.

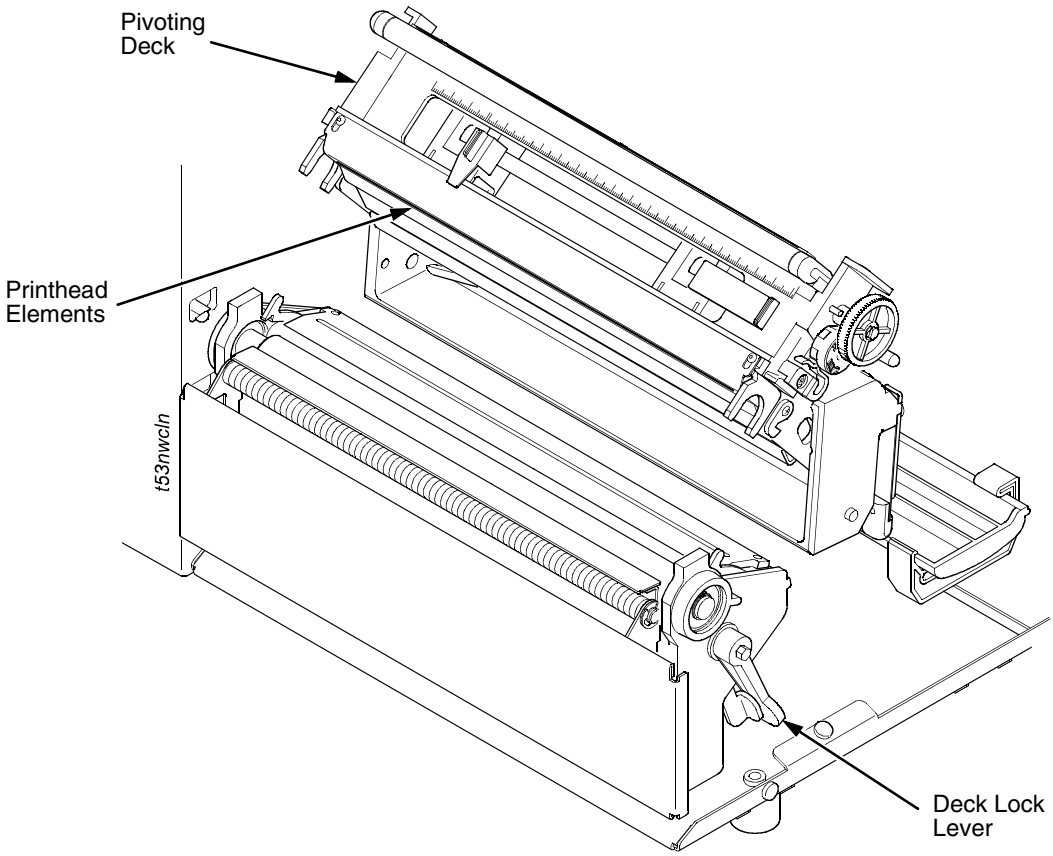
General Cleaning

Perform a periodic cleaning on all rollers, guides, and assemblies. Low pressure air can be used to remove dust in the printer. Isopropyl alcohol and a cotton swab should be used to clean any areas where media dust, adhesives, etc. have accumulated. The media path and printhead should be cleaned each time a new roll of media is installed in the printer.

Printhead Cleaning

As you use your printer, the printhead may become dirty which can result in poor print quality. You should clean the printhead each time you install new ribbon (thermal transfer print mode) or install new media (direct thermal print mode). Clean the printhead with the cleaning pen supplied with the printer.

By keeping your printhead clean, you will help maintain its life.



1. Rotate the deck lock lever clockwise to open the pivoting deck and remove any media and ribbon (if loaded) to gain access to the printhead assembly heating element area.
2. Gently rub the felt tip of the cleaning pen or a cotton swab with Isopropyl alcohol across the printhead heating elements (light brown area).
3. Allow the printhead to dry for one minute before reloading the media and ribbon.

3 *Configuring The Printer*

Overview

This chapter provides information about:

- Setting, saving, modifying, and printing configurations
- Configuration menus
- Downloading emulation and operating system software

Setting Printer Configuration Parameters

Configuration parameters are set from the control panel or are retrieved from the printer's memory. The parameters define how the printer will respond to command and interface signals from the host computer.

The configuration menu structure consists of main menus and the options applicable to each menu.

NOTE: Some configurations refer to printer options that may not be present in your printer. If you select an option or feature that is not present, no action will be performed by the printer or an "OPTION NOT INSTALLED" message will display on the LCD.

Moving Within The Configuration Menu

You can move through the configuration menus using the appropriate navigation keys, as shown in Figure 2. (See “Controls And Indicators” on page 35 for more details on the function of the operator panel keys.)

You can select different options and save them as the power on default; however, you can only save them to configuration menus 1-8. The factory configuration menu can be altered, but not saved.

When the printer is online, the first line of the LCD displays “ONLINE” and the second line lists the active interface port and type of emulation.

To configure the printer:

1. Press the ⋮☰ key to enter the printer configuration menu system. “MENU MODE/QUICK SETUP” displays on the LCD.
2. You can move through configuration main menus in two ways:
   - Press the ⋮☰ key to move to the right.
   - Press the + key to move right or the – key to move left.

NOTE: In menus with numeric ranges of more than 50 numbers, hold down the + or – key for more than 2 seconds to move through the range in increments of 5. To move in increments of 1 again, release your hold on the + or – key.

Step	Press	LCD	Notes
1	PAUSE	OFFLINE	
2	↓ & ↵	ENTER SWITCH UNLOCKED	Allows you to make configuration changes.
3	⋮☰	MENU MODE QUICK SETUP	Enables the printer configuration menu.
4	↓ UNTIL	Print Mode Transfer*	
5	+ or –	Print Mode Direct	Cycles through the choices.
6	↵	Print Mode Direct*	Selects the Direct transfer mode.

Figure 2. Moving within the Configuration Menu

Selecting A Menu Option

To select an option, you need to press the ↵ key. By default, however, the ↵ key is "locked" when the printer is turned on to prevent accidental changes to the configuration menu. If you press the ↵ key when the key is locked, the message "ENTER SWITCH LOCKED" displays on the LCD for one second and the value will not be selected.

To unlock the ↵ key, press the ↓ and ↵ keys simultaneously. This toggles the ENTER/LOCK function.

- If this function is performed while the ↵ key is locked, the message "ENTER SWITCH UNLOCKED" displays for one second, and the ↵ key will be unlocked.
- If this function is performed while the ↵ key is unlocked, the message "ENTER SWITCH LOCKED" displays for one second, and the ↵ key will be locked.

When you press the ↵ key (with the ↵ key unlocked), you select the value or option that displays. An asterisk displays after the value you selected, and the configuration is changed immediately.

IMPORTANT **This change takes effect for all subsequent data and operations for the printer as soon as the ↵ key is pressed and the asterisk (*) is displayed. The configuration change(s) stay in effect only while the printer is powered on. When the power is turned off, all current configurations will be lost unless changes made to it are saved via the CONFIG. CONTROL menu.**

To save configuration information permanently or to select it as the power-up default, see "Saving A Configuration" on page 84.

Changing Printer Settings

You can change (or "configure") printer settings, such as print speed or emulations, through the control panel as follows:

1. Press the ⁝☰ key until the following message displays:

   ```
   MENU MODE
   QUICK SETUP
   ```

2. Press the ↓ key to cycle through these options:
   - Print Intensity
   - Print Speed
   - Print Mode
   - Media Handling
   - Paper Feed Shift
   - Label Length
   - Label Width

- Ver Image Shift
- Hor Image Shift
- Orientation
- Gap/Mark Sensor
- Auto Calibrate
- Save Config.
- Power-Up Config.

3. When the desired submenu displays, press the + or – key to scroll through the values or options.
4. Press the ↵ key to select a value. An asterisk (*) displays next to the selected value or option.
5. If there are more submenu values or options you want to change, use the ☰, ↑, ↓, +, and – keys to access the value and the ↵ key to select it. At any time, you may press the ☰ key to return to the Main menu.
6. At any time, you may press the PAUSE key twice to exit the Configuration menu and place the printer online. Once you have finished selecting all your options, save your configuration.

IMPORTANT **If you do not save your configuration, all your new values will be lost when you power off the printer.**

Saving A Configuration

You can save up to eight different configurations to meet eight unique print job requirements. These configurations are saved and stored in the printer and are not lost when the printer is turned off.

NOTE: If the Protect Configs. option is enabled, the new configuration will not be saved until the existing configuration is deleted.

Follow these steps to save a new configuration:

1. Press the ☰ key until the following message displays:

```
MENU MODE
CONFIG. CONTROL
```

2. Press the ↓ key until the following message displays:

```
Save Config.
1*
```

3. Press the + or – key to cycle through the options (1-8). Note that “Factory” is not listed, because no changes made to the factory configuration can be saved under Factory.

4. When the desired number displays, press the ↵ key to select it. The following message displays briefly:

Saving Configuration

When processing is completed, the display shows:

Save Config. *X**

NOTE: If the configuration number has been previously saved and Protect Configs. = Enabled under CONFIG CONTROL, the following error message displays:

CONFIG. EXISTS Delete First

If the above occurs, see “Modifying A Saved Configuration” on page 86, step 4.

5. Print your configuration and store it in a safe place for future reference. Refer to “Printing A Configuration” on page 87.

Specifying A Power-Up Configuration

You can specify any one of the nine configurations (1-8 or Factory) as the power-up configuration:

1. Press the ⋮☰ key until the following message displays:

MENU MODE CONFIG. CONTROL

2. Press the ↓ key until the following message displays:

Power-Up Config. 1*

3. Press the + or – key to cycle through the options (1-8 and Factory). When the desired number displays, press the ↵ key to select it. The following message displays:

Power-Up Config. *X**

NOTE: If the configuration number has not been saved previously, the following error message displays:

CONFIG. DOES NOT EXIST/Save First

If this error message displays, see “Saving A Configuration” on page 84. Once you have saved a configuration, repeat the steps in this procedure.

Modifying A Saved Configuration

You can change a saved configuration by rewriting over it. For example, you can modify Config. 1, shown below. Suppose you want to keep all the settings but you want to select the parallel Centronics interface instead of the IEEE 1284 interface.

1. Load the configuration to be changed (for example, Config. 1).
   a. Press the ⁝☰ key until the following message displays:

MENU MODE CONFIG. CONTROL

   b. Press the ↓ key until the following message displays:

Load Config. Factory

   c. Press the + or – key to cycle through the options: Factory 1-8.
   d. When the desired number displays, press the ↵ key to select it. The following message displays:

Loading Saved Configuration

   Then, the following message displays when it is loaded:

Load Config. *X**

2. Move through the menu and change all the desired values. (In this example, press the ⁝☰ key until PARALLEL PORT displays. Press the ↓ key until Port Type/IEEE 1284 displays. Press the - key until Centronics displays.)
3. Press the ↵ key to select each new value. An asterisk (*) displays.

4. Before saving the modified configuration, you must delete the original configuration if the Protect Configs. option is enabled.

   a. Press the ↑ or ↓ key until the following message displays:

   ```
   Delete Config.
   1*
   ```

   b. Press the + or – key to cycle through the options (1-8). When the desired number displays, press the ↵ key to select it. The following message displays:

   ```
   Deleting
   Configuration
   ```

   Then, the following displays when it is deleted:

   ```
   Delete Config.
   X*
   ```

5. Save the new configuration as described in the “Saving A Configuration” on page 84. Make sure you select the same number (e.g., Config. 1) when saving the modified configuration. The new configuration writes over the existing one.
6. Print a copy of this newest configuration and store it in a safe place. Refer to “Printing A Configuration” on page 87.

Printing A Configuration

We recommend that you print and store your configurations for future reference. The printout provides a list of the parameters that were set when you configured the printer.

To print a configuration:

1. Press the ⁝☰ key until the following message displays:

   ```
   MENU MODE
   CONFIG. CONTROL
   ```

2. Press the ↓ key until the following message displays:

   ```
   Print Config.
   Current*
   ```

3. Press the + or – key to cycle through the following printout options:

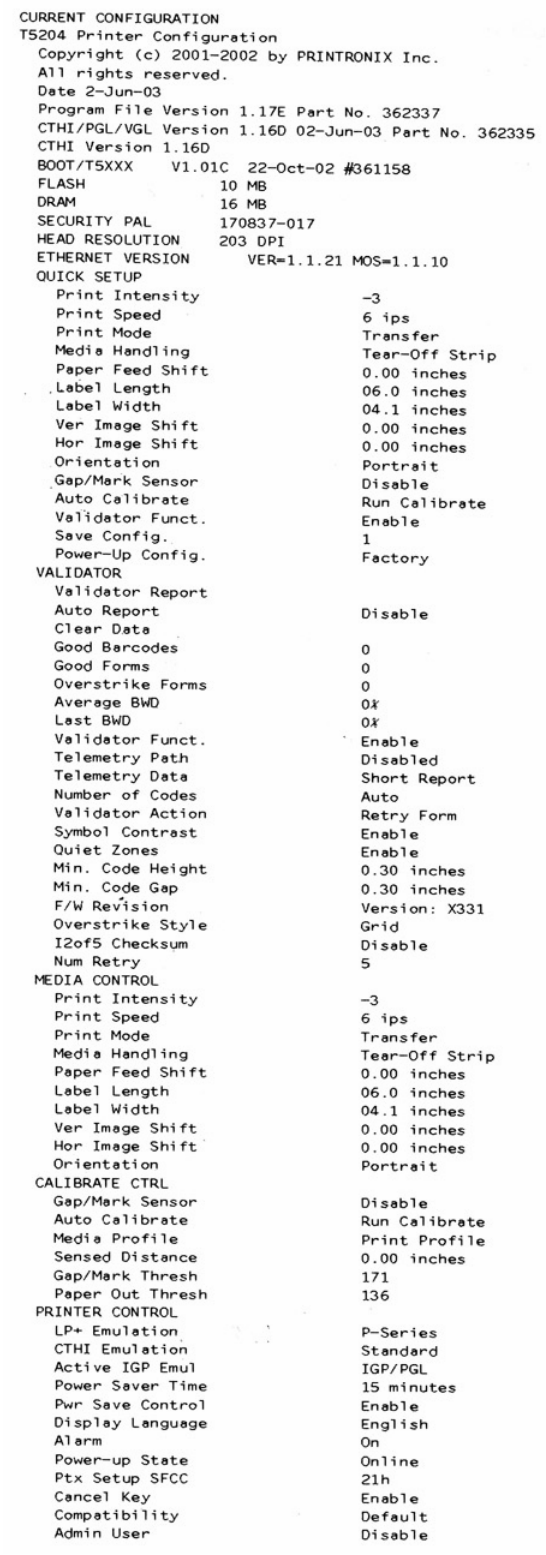
   Current*
   Factory
   Power-Up
   All
   1-8 customized configurations

4. When the desired option displays, press the ↵ key. The printer prints the specified configuration.

NOTE: If the configuration you want to print has not been saved, the following message displays momentarily:

CONFIG. DOES NOT EXIST/Save First

This message indicates that no configuration menu has been saved under the configuration value you have selected and therefore cannot be printed. You must either select another configuration to print or load and then save a configuration to that configuration value first.



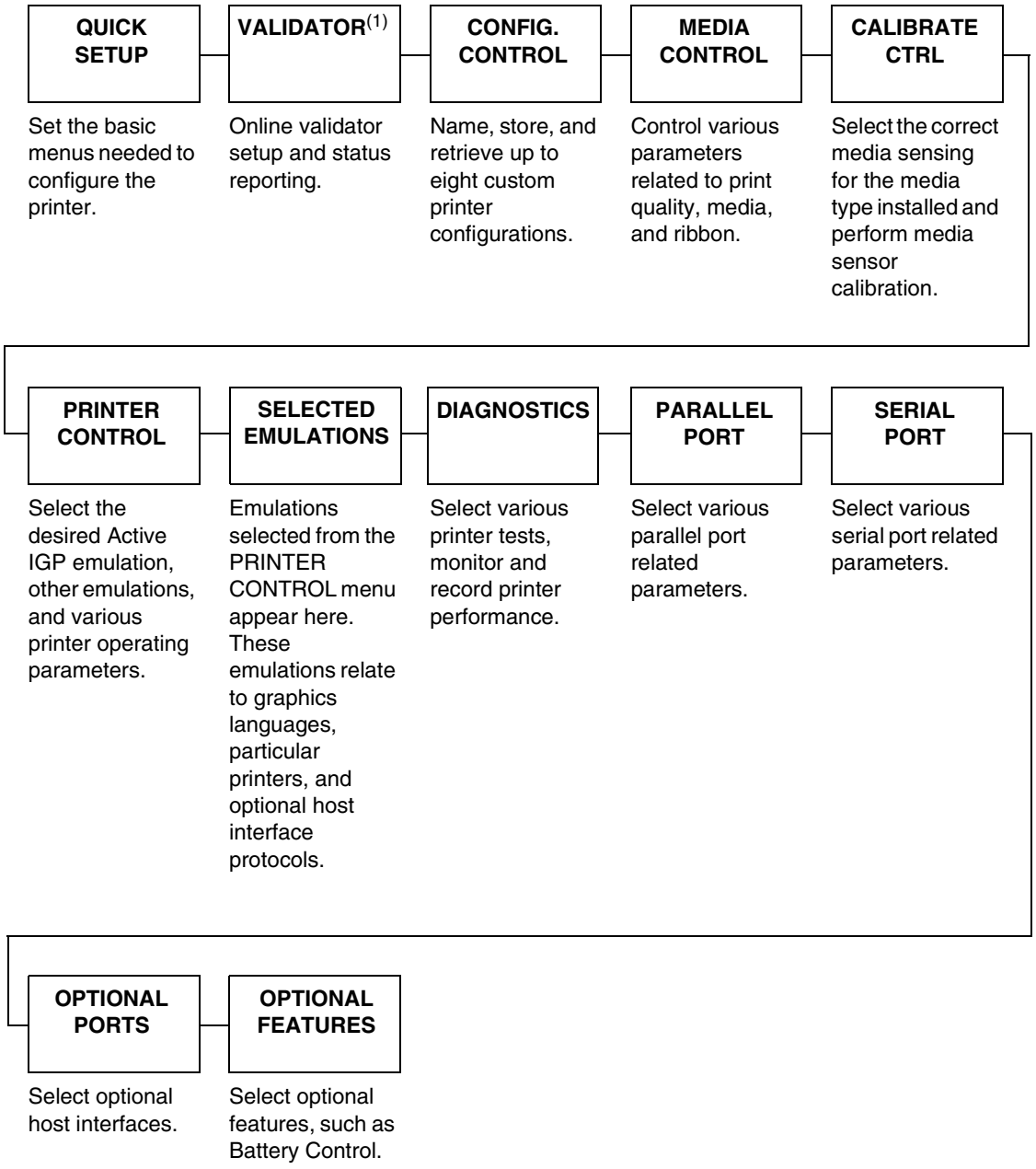
```
CURRENT CONFIGURATION
T5204 Printer Configuration
  Copyright (c) 2001-2002 by PRINTRONIX Inc.
  All rights reserved.
  Date 2-Jun-03
  Program File Version 1.17E Part No. 362337
  CTHI/PGL/VGL Version 1.16D 02-Jun-03 Part No. 362335
  CTHI Version 1.16D
  BOOT/T5XXX     V1.01C  22-Oct-02 #361158
  FLASH              10 MB
  DRAM               16 MB
  SECURITY PAL       170837-017
  HEAD RESOLUTION    203 DPI
  ETHERNET VERSION      VER=1.1.21 MOS=1.1.10
  QUICK SETUP
    Print Intensity                -3
    Print Speed                    6 ips
    Print Mode                     Transfer
    Media Handling                 Tear-Off Strip
    Paper Feed Shift               0.00 inches
    Label Length                   06.0 inches
    Label Width                    04.1 inches
    Ver Image Shift                0.00 inches
    Hor Image Shift                0.00 inches
    Orientation                    Portrait
    Gap/Mark Sensor                Disable
    Auto Calibrate                 Run Calibrate
    Validator Funct.               Enable
    Save Config.                   1
    Power-Up Config.               Factory
  VALIDATOR
    Validator Report
    Auto Report                    Disable
    Clear Data
    Good Barcodes                  0
    Good Forms                     0
    Overstrike Forms               0
    Average BWD                    0%
    Last BWD                       0%
    Validator Funct.               Enable
    Telemetry Path                 Disabled
    Telemetry Data                 Short Report
    Number of Codes                Auto
    Validator Action               Retry Form
    Symbol Contrast                Enable
    Quiet Zones                    Enable
    Min. Code Height               0.30 inches
    Min. Code Gap                  0.30 inches
    F/W Revision                   Version: X331
    Overstrike Style               Grid
    I2of5 Checksum                 Disable
    Num Retry                      5
  MEDIA CONTROL
    Print Intensity                -3
    Print Speed                    6 ips
    Print Mode                     Transfer
    Media Handling                 Tear-Off Strip
    Paper Feed Shift               0.00 inches
    Label Length                   06.0 inches
    Label Width                    04.1 inches
    Ver Image Shift                0.00 inches
    Hor Image Shift                0.00 inches
    Orientation                    Portrait
  CALIBRATE CTRL
    Gap/Mark Sensor                Disable
    Auto Calibrate                 Run Calibrate
    Media Profile                  Print Profile
    Sensed Distance                0.00 inches
    Gap/Mark Thresh                171
    Paper Out Thresh               136
  PRINTER CONTROL
    LP+ Emulation                  P-Series
    CTHI Emulation                 Standard
    Active IGP Emul                IGP/PGL
    Power Saver Time               15 minutes
    Pwr Save Control               Enable
    Display Language               English
    Alarm                          On
    Power-up State                 Online
    Ptx Setup SFCC                 21h
    Cancel Key                     Enable
    Compatibility                  Default
    Admin User                     Disable
```

Figure 3. Sample Configuration Printout

TWINAX SETUP	
Primary Sets	0037 English US
Translation Tbl	
Buffer Print	Disable
Twinax Type	4234-2
IGP/PGL SETUP	
Character Group	Standard Sets
Standard Sets	0) ASCII
Select LPI	6
Define CR Code	CR = CR
Define LF Code	LF = LF
Autowrap	Disable
Auto Uppercase	Disable
Slash 0	Disable
Select SFCC	1:6
PARALLEL PORT	
Port Type	Ethernet
Buffer Size in K	16
Auto Trickle	Disable
Trickle Time	1/4 sec
Timeout	10 sec.
Report Status	Disable
SERIAL PORT	
Port Type	RS 232
Baud Rate	9600 BAUD
Word Length	8
Stop Bits	1
Parity	None
Data Protocol	XON / XOFF
Buffer Size in K	16
Trickle Time	1/4 sec
Timeout	10 sec.
Report Status	Disable
Framing Errors	Enable
C/T PORT	
Port Type	Twinax
Device Address	Address 1
Image Buf Size	4K
Timeout	10 sec.
Report Status	Disable
ETHERNET ADDRESS	
IP Address	010.224.005.003
Subnet Mask	255.255.000.000
Gateway Address	010.224.001.254
MAC Address	0080720A065E
DHCP	Enable
ETHERNET PARAMS	
Novell Protocol	Enable
Nest Serv Type	Auto
NetBIOS Protocol	Enable
Novell Frame	Auto Sensing
ASCII Data Port	9100
Keep Alive Timer	3 Minutes
Ethernet Speed	Auto Select
Job Control	Standard
WIRELESS ADDRESS	
IP Address	010.224.002.010
Subnet Mask	255.255.000.000
Gateway Address	010.224.001.254
MAC Address	0080720A065F
DHCP	Disable
WIRELESS PARAMS	
Signal Strength	90%
Operation Mode	Infrastructure
SSID Name	Eng_Lucent1
Min Xfer Rate	Auto-negotiate
Channel	Default
Ant. Diversity	Diverse
Preamble	Default
Power Mgmt	0 ms.
Transmit Power	100%
Internat. Mode	Disable
Default WEP Key	1
KERBEROS PARAMS	
Kerberos Enable	Disable
KDC Port Number	88
Clock Skew	300 Seconds
Ticket Lifetime	43200 Seconds
Renew Lifetime	0 Seconds
BATTERY CONTROL	
Battery Monitor	Disable

Sample Configuration Printout (cont.)

Menu Overview


QUICK SETUP
Set the basic menus needed to configure the printer.
VALIDATOR(1)
Online validator setup and status reporting.
CONFIG. CONTROL
Name, store, and retrieve up to eight custom printer configurations.
MEDIA CONTROL
Control various parameters related to print quality, media, and ribbon.
CALIBRATE CTRL
Select the correct media sensing for the media type installed and perform media sensor calibration.
PRINTER CONTROL
Select the desired Active IGP emulation, other emulations, and various printer operating parameters.
SELECTED EMULATIONS
Emulations selected from the PRINTER CONTROL menu appear here. These emulations relate to graphics languages, particular printers, and optional host interface protocols.
DIAGNOSTICS
Select various printer tests, monitor and record printer performance.
PARALLEL PORT
Select various parallel port related parameters.
SERIAL PORT
Select various serial port related parameters.
OPTIONAL PORTS
Select optional host interfaces.
OPTIONAL FEATURES
Select optional features, such as Battery Control.

Press ☰ to select the next main menu.

Press ↓ or ↑ to move within each main menu.

NOTES:

[1] This menu appears only if a Validator is installed.

Main Menu

QUICK SETUP (page 100)

Print Intensity
Print Speed
Print Mode
Media Handling
Paper Feed Shift
Label Length
Label Width
Ver Image Shift
Hor Image Shift
Orientation
Gap/Mark Sensor[1]
Auto Calibrate
Validator Funct.[2]
Save Config.
Power-Up Config.

VALIDATOR[2] **(page 108)**

Validator Report
Auto Report
Clear Data
Good Barcodes
Good Forms
Overstrike Forms
Average BWD
Last BWD
Validator Funct.
Telemetry Path
Telemetry Data
Number of Codes
Validator Action
Symbol Contrast
Quiet Zones
Min. Code Height
Min. Code Gap
Skip Labels
F/W Revision
Overstrike Style
I2of5 Checksum
Num Retry
Decodeability
Percent Decode
Defects
Scanner Settings
Beam Shift

CONFIG. CONTROL (page 115)

Load Config.
Save Config.
Print Config.
Delete Config.
Power-Up Config.
Protect Configs.
Name Config 1
Name Config 2
Name Config 3
Name Config 4
Name Config 5
Name Config 6
Name Config 7
Name Config 8
Reset Cfg Names

MEDIA CONTROL (page 118)

Print Intensity
Print Speed
Print Mode
Media Handling
Paper Feed Shift
Label Length
Label Width
Ver Image Shift
Hor Image Shift
Orientation
Auto Map Select
Auto Label Width
Num Auto Labels
Slew Speed
Print Direction
Tear-Strip Time
Pre-Peel Mode
Pre-Peel Adjust
Clip Page
Error Recover
Ribbon Width
Display Ribbon
Ribbon Low
Rbn Takeup Full
Units
Set Label Length
Cutter Type
Peel-Off Mode
Continuous Mode
TOF Detect Fault

CALIBRATE CTRL (page 134)

Gap/Mark Sensor[1]
Auto Calibrate
Media Profile
Sensed Distance
Gap/Mark Thresh
Paper Out Thresh
Paper Out Sensor[1]
Manual Calibrate
Pwr Up Auto-Cal
Online Auto-Cal
Gap Windowing
Gap Length
Cal in Peel Mode
Min Calib Delta
Use Label Length

Press ⋮☰ to select the next main menu.

Press ↓ or ↑ to move within each main menu.

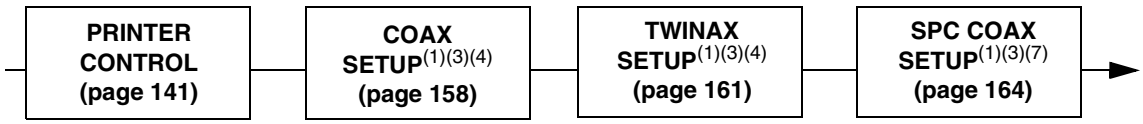
Press + or – to cycle through each possible option or value.

NOTES:

Italicized items are available only when you enable Admin User (under PRINTER CONTROL).

[1] Gap/Mark Sensor and Paper Out Sensor work in conjunction, as shown in Table 6 on page 134. If you change the Gap/Mark Sensor or Paper Out Sensor, you must recalibrate the media.

[2] This menu appears only if a Validator is installed.



PRINTER CONTROL (page 141)

LP+ Emulation
CTHI Emulation(1)
Host Interface
Active IGP Emul
Power Saver Time
Pwr Save Control
Display Language
Alarm
Power-up State
Ptx Setup SFCC
Cancel Key
Compatibility
Set Sharing(2)
Admin User
Del Char frm Fls
Ld Char from Fls
Save Char to Fls
Del Char frm RAM
Ld Char at PwrUp
Del Set frm Flsh
Ld Set from Flsh
Save Set to Flsh
Del Set from RAM
Ld Set at PwrUp
Overwrite Files
View File List
Delete Files
Optimize&Reboot
Print File List
Auto Locking
Set Lock Key
Ptx Setup Parse
RAM Disk Size
Glob Mem Adjust
Max Cache Memory
Max Cached Char
Standard Chars.
Bold Chars.
Extra Bold Char.
OCR-A Chars.
OCR-B Chars.
Tall Characters
Batch Counter

COAX SETUP(1)(3)(4) **(page 158)**

Primary Sets
Translation Tbl
PA1
PA2
Buffer Reprint
Buffer Print
Coax Type
Active Char Set
Secondary Sets
Early Print Cmpl
SCS Buffer Cntrl
Alt. Set 80-9F
Intervention Req
CR At MPP + 1
NL At MPP + 1
Position Aft FF
Last Char = FF
Null Suppression
FF Validity
Auto Skip At End
FF After Job
CR, EM, & NL
Translate Table
Host Override
Format Control
Cancel IGP/DCU
Lead-in Chars
User-Defined St1(5)
User-Defined St2(5)
User-Defined Stp(5)
Change Case
Set Text Orientn
Max. Print Width

TWINAX SETUP(1)(3)(4) **(page 161)**

Primary Sets
Translation Tbl(6)
Buffer Print
Twinax Type
Active Char Set
Secondary Sets
5225 World Trade
Cancel IGP/DCU
Lead-in Chars
User-Defined St1(5)
User-Defined St2(5)
User-Defined Stp(5)
Alt. Set 80-9F
Graphic Chek Err
Graphic Chek Cod
LAC Option
LAC Approx.
Set Text Orientn
Host Override
Format Control
Max. Print Width

SPC COAX SETUP(1)(3)(7) **(page 164)**

SPC Type
Logical Buf Size
Intervention Req
Buffer Print
Translation Tbl
PA1
PA2
Buffer Reprint
Null Handling
SPC Null Supp
SPC Space Supp
SFCC Char
User-Defined St1(5)
User-Defined St2(5)
User-Defined Stp(5)
NL At MPP + 1

NOTES:

Italicized items are available only when you enable Admin User (under PRINTER CONTROL).

[1] Appears only if the CTHI option is installed.

[2] Appears only if the PPI1 emulation is installed.

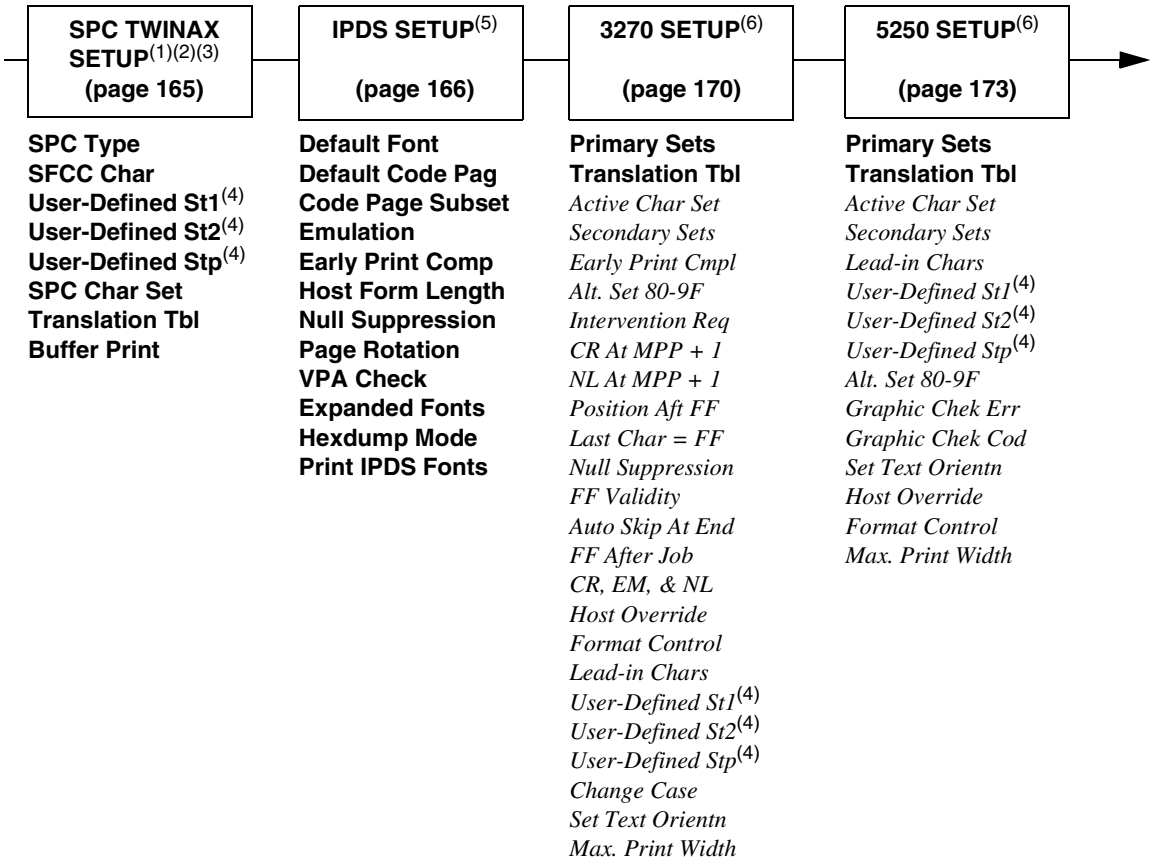
[3] Appears only if selected as the Port Type (under C/T PORT).

[4] Appears only if the CTHI emulation (under PRINTER CONTROL) is set to Standard.

[5] Appears only if the “User Defined” option in the “Lead-in Chars” menu is selected.

[6] Does not appear if the IPDS emulation is installed.

[7] Appears only if the CTHI emulation (under PRINTER CONTROL) is set to Simp Prot Conv.



NOTES:

Italicized items are available only when you enable Admin User (under PRINTER CONTROL).

[1] Appears only if the CTHI option is installed.

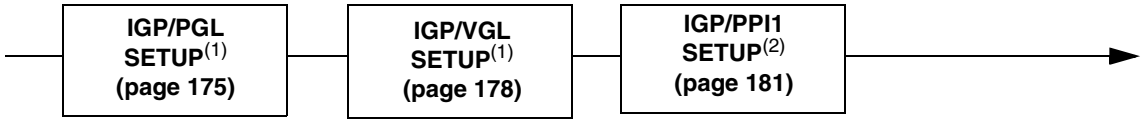
[2] Appears only if selected as the Port Type (under C/T PORT).

[3] Appears only if the CTHI emulation (under PRINTER CONTROL) is set to Simp Prot Conv.

[4] Appears only if the “User Defined” option in the “Lead-in Chars” menu is selected.

[5] Appears only if the IPDS emulation is installed.

[6] Appears only if the TN5250/TN3270 option is installed.



IGP/PGL SETUP(1) (page 175)

Character Group
Standard Sets
Select LPI
Define CR Code
Define LF Code
Autowrap
Auto Uppercase
Slash 0
Select SFCC
Host Form Length
Var Form Adjust
Var Form Type
Optimized Ratio
PI Slew Range
CR Edit
Skip Cmd Prefix
Ignore Text
Power on IGP/PGL
Ext Execute Copy
Al 00 Spaces
Select SO Char
Ignore Mode
Select Char
Do FF at TOF
IGP100 Compatbl.
Expanded Font
Scalable Size
Autoeject
PGL Normal
UPC Descenders
I-2/5 Selection
User-Def Ratio
Lead PDF Dist
Error Report
Repeat Form Opt

IGP/VGL SETUP(1) (page 178)

SFCC
Power-up ^X
Power-up ^F
Power-up ^PY
LPI
Btm Margin Ctl
Text Length
Autoeject
Copy Count
Host Form Length
Slash 0
Ignore Dots
Append Rotated
Truncate Alpha
True Vert 1/10
Absorb After ^PY
UPC Descenders
Select SO Char
Rot. Char Size
Ignore Spaces
Ignore ^Lxx Cmd.
Midline PY
Width Limit
Absorb After ^PN
Expanded Font
Auto FF at ^PN
Vertical Density
Error Msgs
Error Markers
Offpage Errors
Barcode Errors
Ignore Chars
Ignore Ch#1
Ignore Ch#2
Data Bit 8
Cmd Resolution
^Dnn Dot Slew
Barcode var.
Character Group
Standard Sets
Uniform Fonts
Prop Line Length
Printer PI
Host PI
Max PI 16

IGP/PPI1 SETUP(2) (page 181)

ZPL Compatible
Command Prefix
Label Prefix
Delimiter
LP+ Text Mode
Preparser Command
Preparser Port
MC Label Fmt
PQ Label Fmt
Label Buf Size
Host Form Length
Left Position
Top Position
Resolution Mode
Vertical Adjust(3)
Vertical Density(3)
IS Label Fmt
Character Group(4)
Standard Sets(4)

NOTES:

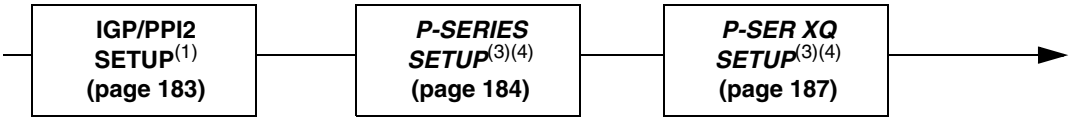
Italicized items are available only when you enable Admin User (under PRINTER CONTROL).

[1] The presence of these menu items depends on the Active IGP Emul selection (under PRINTER CONTROL).

[2] Appears only if the PPI1 emulation is installed.

[3] Appears only in printers equipped with a 203 or 300 dpi print head.

[4] Each character set will contain different individual characters. PPI uses scalable fonts rather than bitmapped fonts.



IGP/PPI2 SETUP[1] (page 183)

Active
Print Errors
Character Set
Slash Zero
Image Scale
SFCC Select
SFCC[2]
SFCC Separator[2]
SFCC Terminator[2]
EURO Symbol
Speed CMDs
AY Intensity
U1/U2 Move CMDs
XS Media 'D' Act
AR Pre-Feed CMD
AX Fine Adj. CMD
Vert. DPI Adjust

***P-SERIES SETUP*[3][4] (page 184)**

Select CPI
Select LPI
Typeface
Character Group
Character Set
Primary Subset
Extended Subset
Horizontal DPI
Vertical DPI
Prop. Spacing
Italic Print
Slashed Zero
Left Margin[5]
Right Margin[5]
Top Margin
Bottom Margin
Print Char. Set
Define CR code
Auto LF
Define LF code
Control Code 06
Control Code 08
Bold
Overstrike
Select SFCC
EVFU Select
Alt. Set 80-9F
SFCC d command
PSeries Dbl High
FF valid at TOF
Text Position
Host Command
Reset Cmd CFG Ld
Form Length (inches)[5]
Form Length (mm)[5]
Form Length (lines)
Form Width (inches)[5]
Form Width (mm)[5]
Form Width (char.)

***P-SER XQ SETUP*[3][4] (page 187)**

Select CPI
Select LPI
Typeface
Horizontal DPI
Vertical DPI
Prop. Spacing
Italic Print
Slashed Zero
Left Margin[5]
Right Margin[5]
Top Margin
Bottom Margin
Print Char. Set
Define CR code
Auto LF
Define LF code
Control Code 06
Compressed Print
Bold
Elong/Alt. Font
Gothic Typeface
EVFU Select
Upr. Case Select
Slew Relative
Text Position
Host Command
Reset Cmd CFG Ld
Form Length (inches)[5]
Form Length (mm)[5]
Form Length (lines)
Form Width (inches)[5]
Form Width (mm)[5]
Form Width (char.)

NOTES:

Italicized items are available only when you enable Admin User (under PRINTER CONTROL).

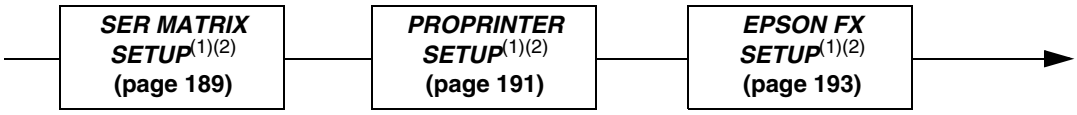
[1] Appears only if the PPI2 emulation is installed.

[2] These menus are only available when "User Defined" is selected in the "SFCC Select" menu.

[3] This menu is available only when you enable Admin User (under PRINTER CONTROL).

[4] The presence of this menu depends on the LP+ Emulation selection (under PRINTER CONTROL).

[5] This menu does not display when the CT emulation is selected.



Select CPI
Select LPI
Typeface
Character Group
Character Set
Primary Subset
Extended Subset
Horizontal DPI
Vertical DPI
Prop. Spacing
Italic Print
Slashed Zero
Left Margin(3)
Right Margin(3)
Top Margin
Bottom Margin
Print Char. Set
Define CR code
Auto LF
Define LF code
Control Code 06
Bold
Overstrike
Printer Select
Alt. Set 80-9F
ESC d command
Text Position
Host Command
Reset Cmd CFG Ld
Form Length (inches)(3)
Form Length (mm)(3)
Form Length (lines)
Form Width (inches)(3)
Form Width (mm)(3)
Form Width (char.)

Select CPI
Select LPI
Typeface
Character Group
Character Set
Horizontal DPI
Vertical DPI
Prop. Spacing
Italic Print
Slashed Zero
Left Margin(3)
Right Margin(3)
Top Margin
Bottom Margin
Print Char. Set
Define CR code
Auto LF
Define LF code
20 CPI Condensed
Bold
FF valid at TOF
Alt. Char Set
Text Position
Host Command
Reset Cmd CFG Ld
Form Length (inches)(3)
Form Length (mm)(3)
Form Length (lines)
Form Width (inches)(3)
Form Width (mm)(3)
Form Width (char.)

Select CPI
Select LPI
Typeface
Character Group
Character Set
Epson Set
Horizontal DPI
Vertical DPI
Prop. Spacing
Italic Print
Slashed Zero
Left Margin(3)
Right Margin(3)
Top Margin
Bottom Margin
Print Char. Set
Define CR code
Auto LF
Define LF code
Printer Select
20 CPI Condensed
Bold
Alt. Set 80-9F
Text Position
Host Command
Reset Cmd CFG Ld
Form Length (inches)(3)
Form Length (mm)(3)
Form Length (lines)
Form Width (inches)(3)
Form Width (mm)(3)
Form Width (char.)

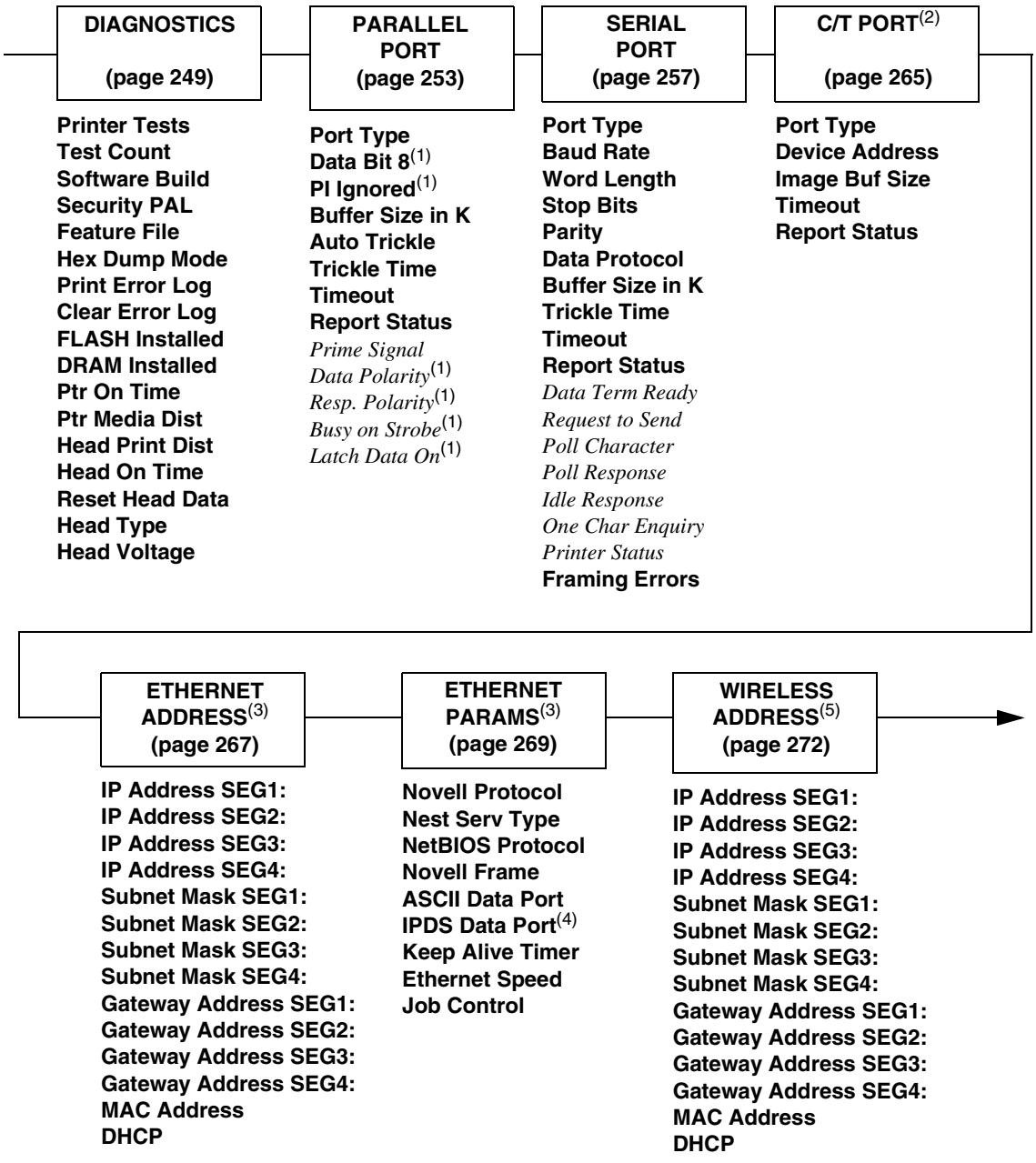
NOTES:

Italicized items are available only when you enable Admin User (under PRINTER CONTROL).

[1] This menu is available only when you enable Admin User (under PRINTER CONTROL).

[2] The presence of this menu depends on the LP+ Emulation selection (under PRINTER CONTROL).

[3] This menu does not display when the CT emulation is selected.



NOTES:

Italicized items are available only when you enable Admin User (under PRINTER CONTROL).

[1] Available only when the Centronics option is enabled (in the Port Type submenu of PARALLEL PORT).

[2] Appears only if the CTHI option is installed.

[3] Appears only if an Ethernet Network Interface Card (NIC) is installed.

[4] Appears only if the IPDS emulation is installed.

[5] Appears only if a Wireless Option is installed.

WIRELESS PARAMS[1] (page 275)

- Signal Strength
- Operation Mode
- SSID Name(01-15)
- SSID Name(16-30)
- SSID Name(31-32)
- Reset SSID Name
- Min Xfer Rate
- Channel
- Ant. Diversity
- Preamble
- Power Mgmt
- Transmit Power
- Internat. Mode
- Default WEP Key
- WEP Key 1 Format
- WEP Key 1 Width
- WEP Key 1 BYTE1:
- WEP Key 1 BYTE2:
- WEP Key 1 BYTE3:
- WEP Key 1 BYTE4:
- WEP Key 1 BYTE5:
- WEP Key 1 BYTE6:[2]
- WEP Key 1 BYTE7:[2]
- WEP Key 1 BYTE8:[2]
- WEP Key 1 BYTE9:[2]
- WEP Key 1 BYTE10:[2]
- WEP Key 1 BYTE11:[2]
- WEP Key 1 BYTE12:[2]
- WEP Key 1 BYTE13:[2]
- WEP Key 2 Format
- WEP Key 2 Width
- WEP Key 2 BYTE1:
- WEP Key 2 BYTE2:
- WEP Key 2 BYTE3:
- WEP Key 2 BYTE4:
- WEP Key 2 BYTE5:
- WEP Key 2 BYTE6:[3]
- WEP Key 2 BYTE7:[3]
- WEP Key 2 BYTE8:[3]
- WEP Key 2 BYTE9:[3]
- WEP Key 2 BYTE10:[3]
- WEP Key 2 BYTE11:[3]
- WEP Key 2 BYTE12:[3]
- WEP Key 2 BYTE13:[3]
- WEP Key 3 Format
- WEP Key 3 Width

(continued in next column)

WIRELESS PARAMS (continued)

- WEP Key 3 BYTE1:
- WEP Key 3 BYTE2:
- WEP Key 3 BYTE3:
- WEP Key 3 BYTE4:
- WEP Key 3 BYTE5:
- WEP Key 3 BYTE6:[4]
- WEP Key 3 BYTE7:[4]
- WEP Key 3 BYTE8:[4]
- WEP Key 3 BYTE9:[4]
- WEP Key 3 BYTE10:[4]
- WEP Key 3 BYTE11:[4]
- WEP Key 3 BYTE12:[4]
- WEP Key 3 BYTE13:[4]
- WEP Key 4 Format
- WEP Key 4 Width
- WEP Key 4 BYTE1:
- WEP Key 4 BYTE2:
- WEP Key 4 BYTE3:
- WEP Key 4 BYTE4:
- WEP Key 4 BYTE5:
- WEP Key 4 BYTE6:[5]
- WEP Key 4 BYTE7:[5]
- WEP Key 4 BYTE8:[5]
- WEP Key 4 BYTE9:[5]
- WEP Key 4 BYTE10:[5]
- WEP Key 4 BYTE11:[5]
- WEP Key 4 BYTE12:[5]
- WEP Key 4 BYTE13:[5]
- Reset WEP Keys

KERBEROS PARAMS[6] (page 283)

- Kerberos Enable
- Kerb. Pwd(01-15)
- Kerb. Pwd(16-30)
- Kerb. Pwd(31-40)
- Reset Kerb. Pwd
- KDC Port Number
- Clock Skew Units
- Clock Skew (SEC)
- Tckt Life Units
- Tckt Life (SEC)
- Renew Life Units
- Renew Life (SEC)

BATTERY CONTROL[7] (page 286)

- Battery Monitor
- Time To Go[8]
- Percent Charge[8]
- Current Draw[8]
- Voltage[8]
- Amp-Hour Used[8]
- Time To Go Alert[8]
- High Volt Alert[8]
- Low Volt Alert[8]

NOTES:

1 Appears only if a Wireless Option is installed.

2 Appears only if “WEP Key 1 Width” is set to 128 Bits.

3 Appears only if “WEP Key 2 Width” is set to 128 Bits.

4 Appears only if “WEP Key 3 Width” is set to 128 Bits.

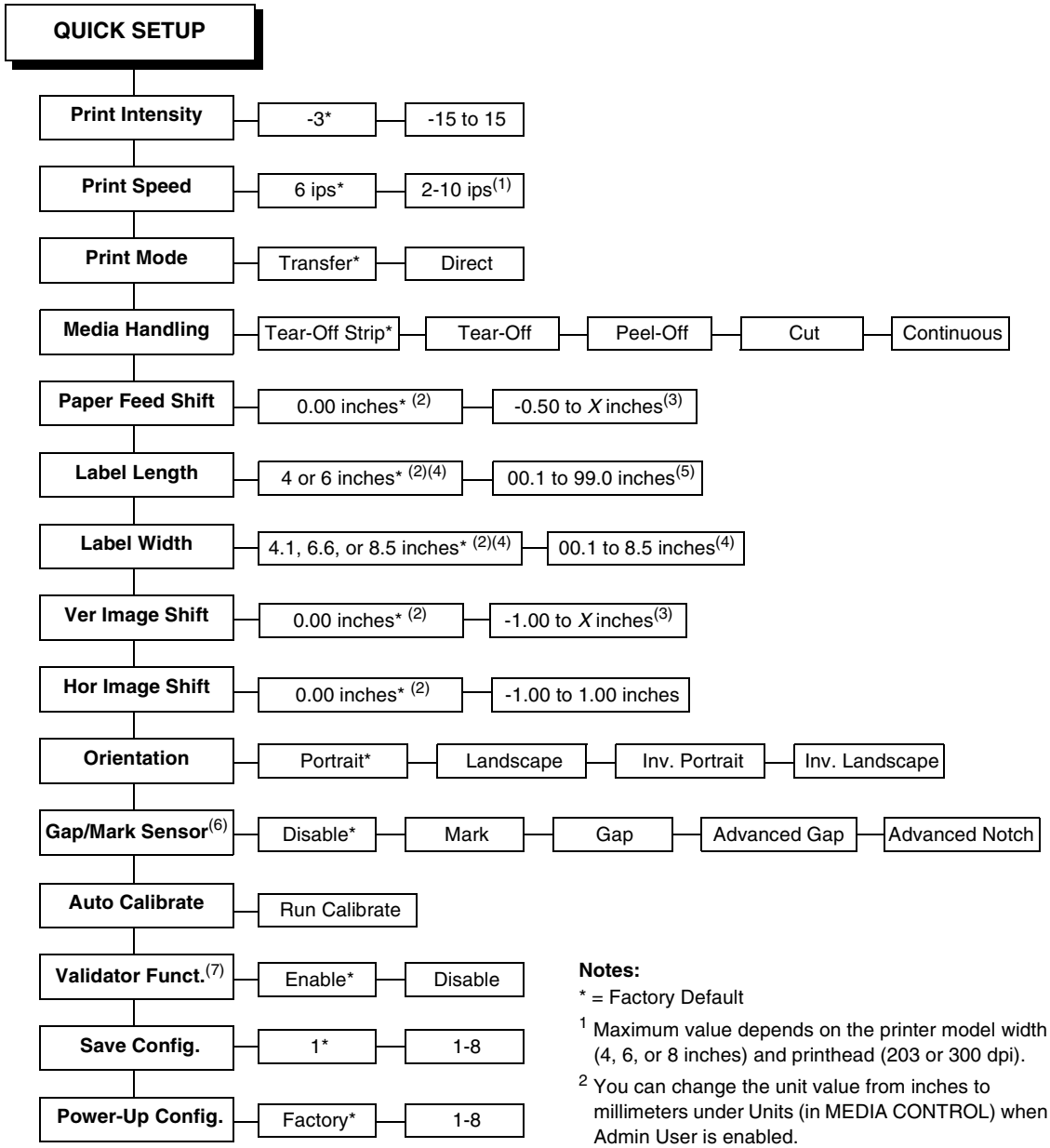
5 Appears only if “WEP Key 4 Width” is set to 128 Bits.

6 Appears only if a Symbol RF card is installed.

7 Does not appear if the CTHI option is installed.

8 Available only when you select “Enable” in the Battery Monitor submenu (in the BATTERY CONTROL menu).

QUICK SETUP



Notes:

* = Factory Default

[1] Maximum value depends on the printer model width (4, 6, or 8 inches) and printhead (203 or 300 dpi).

[2] You can change the unit value from inches to millimeters under Units (in MEDIA CONTROL) when Admin User is enabled.

[3] Based on the current value setting for the Label Length (in QUICK SETUP), up to a maximum of 12.80 inches.

[4] Maximum value depends on the width of the printer model (see Appendix A, “Specifications”).

[5] Maximum value depends on model width and size of DRAM installed (see Appendix A, “Specifications”).

[6] Gap/Mark Sensor and Paper Out Sensor work in conjunction, as shown in Table 6 on page 134. If you change the Gap/Mark Sensor or Paper Out Sensor, you must recalibrate the media.

[7] Appears only if a validator is installed.

QUICK SETUP Submenus

Print Intensity

This option specifies the level of thermal energy from the printhead to be used for the type of media and ribbon installed.

Large numbers imply more heat (thermal energy) to be applied for each dot. This has a significant effect on print quality. The print intensity and speed must match the media and ribbon type to obtain the best possible print quality and barcode grades.

The range is -15 through +15:

- The factory default is -3 in Transfer mode.
- The factory default is 0 in Direct Thermal mode.

Print Speed

This option specifies the speed in inches per second (ips) at which the media passes through the printer while printing.

The range is 2 through 10 ips (in increments of 1 ips).

The factory default is 6 ips.

NOTE: The maximum print speed varies based on maximum printer width and dot per inch (dpi) resolution of the printhead installed (203 or 300 dpi). See Table 18 on page 337.

Print Mode

This option specifies the type of printing to be done.

- **Transfer**. Indicates Thermal Transfer printing (ribbon installed).
- **Direct**. Indicates Direct Thermal printing (no ribbon) and requires special heat sensitive media.

The factory default is Transfer.

Media Handling

This option specifies how the printer will handle the media (labels or tag stock).

- **Tear-Off Strip**. Printer prints on the media and sends it out the front until the print buffer is empty, then positions the trailing edge of the last label over the tear bar for removal.
- **Tear-Off**. After each label is printed, the printer positions the label over the tear bar and waits for you to tear off the label before printing the next one (on-demand printing). A “Remove Label” message will display to remind you to remove the label before the next one can be printed.

- **Peel-Off**. Prints and peels die-cut labels from the liner without assistance. The printer waits for you to take away the label before printing the next one (on-demand printing). The label liner is rewound on the internal rewinder. A “Remove Label” message will display to remind you to remove the label before the next one can be printed.
- **Cut**. When the optional media cutter is installed, it automatically cuts media after each label is printed or after a specified number of labels have been printed when a software cut command has been issued. It cuts continuous roll paper, labels, or tag stock.
- **Continuous**. Printer prints on the media and sends it out the front.

The factory default is Tear-Off Strip.

Paper Feed Shift

This option represents the distance to advance (+ shift) or pull back (– shift) the stop position of a label when Tear-Off Strip, Tear-Off, Peel-Off, or Cut media handling option is enabled. The allowable range is -0.50 inches to the current Label Length value setting, up to a maximum of 12.80 inches, in .01 inch increments.

The factory default is 0.00 inches.

Label Length

This option specifies the user-selected Label Length in inches or millimeters. In most applications, the user-selected Label Length will match the *physical* label length. Physical label length is the actual label length of the media installed.

When setting label length, consider the following:

Label Length can also be manually entered via the control panel MEDIA CONTROL menu or sent via host computer using the appropriate software command.

A Host Forms Length (Label Length) value sent from the host computer will override and change the manually entered Label Length value in the QUICK SETUP or MEDIA CONTROL menu.

- **Physical Label Length** is the actual measurable length of the label. The following list of different media types explains how the physical label lengths are determined:
    - Die-cut labels – measurable length of the removable label (leading edge to trailing edge). This does not include the liner material or gap.
    - Tag Stock with notches or holes – measurable length from the trailing edge of one notch or hole to the leading edge of the next notch or hole.
    - Tag Stock with black marks on underside – measurable length from the leading edge of one black mark to the leading edge of the next black mark.

- Continuous media (no label length indicators) – measurable length should be within ± 1-2% the Label Length value entered in the QUICK SETUP, MEDIA CONTROL menu, or the value sent via host software command.

- **Logical Label Length** (Host Forms Length) is the length that a user or programmer bases his printable image on. In most cases this length should be slightly less than the Physical Label Length. This allows the entire image to be printed within the boundaries of the label length indicators (gaps, notches, holes, or black marks).

  When the Logical Label Length is greater than the Physical Label Length and Clip Page = Enable (in the MEDIA CONTROL menu), the printer will clip the bottom portion of the image that exceeds the Physical Label length. In this case, the printable data that was not printed will be lost.

  When the Logical Label Length is greater than the Physical Label Length and Clip Page = Disable, the printer will continue to print the image onto the next physical label and ignore the gap or mark based on the label length value set in the QUICK SETUP or MEDIA CONTROL menu.

  When the Logical Label Length is less than the Physical Label Length, the printer will print the entire image and leave blank space the remaining length of the physical label as it advances to the Top-of-Form of the next label. This is true regardless of the Clip Page setting.

The allowable Label Length range is 00.1 to 99.0 inches (2.5 - 2514.6mm) The factory defaults are listed below:

Table 2. Factory Default Label Length

Printer	Inches	mm	Lines
T5X04	6	152.4	36
T5X06	4	101.6	24
T5X08	6	152.4	36

Maximum Label Length range is dependent on the Label Width value selected, printhead installed (203 or 300 DPI), and the size of DRAM SIMM installed in the printer. See Appendix A for specifications.

NOTE: See “Set Label Length” on page 132.

Label Width

This option specifies the physical width of the image to be printed. The value can be specified in inches or millimeters depending on the setting of the Units submenu under the MEDIA CONTROL menu. The allowable range in inches is 00.1 to the maximum print width of the printer. The allowable range in millimeters is 2.5 to the maximum width of the printer.

The default value depends on model width and size of DRAM SIMM installed.

Ver Image Shift

This option specifies the amount to shift an image vertically up (-) or down (+) for precise positioning on the label. The actual height of the image is not affected by this parameter. The allowable range is -1.00 inches to the current Label Length value setting, up to a maximum of 12.80 inches, in .01 inch increments.

The factory default value is 0.00 inches.

Hor Image Shift

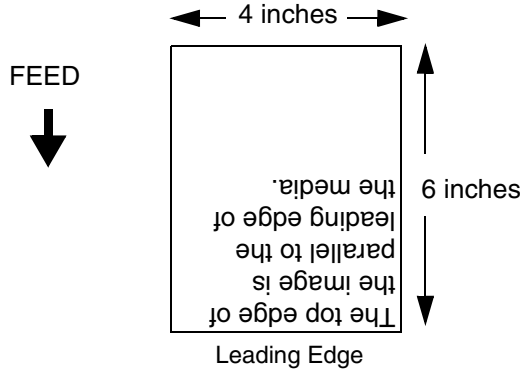
This option specifies the amount to shift an image horizontally left (-) or right (+) for precise positioning on the label. The actual width of the image is not affected by this parameter. The allowable range is -1.00 through +1.00 inches in .01 inch increments, displayed as *xx*/100.

The factory default value is 0.00 inches.

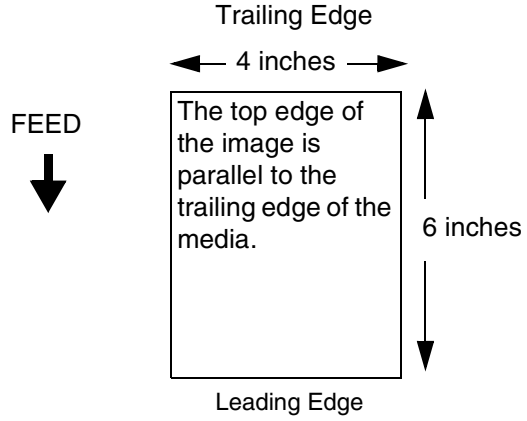
Orientation

This menu item selects the image orientation to be used when printing the label.

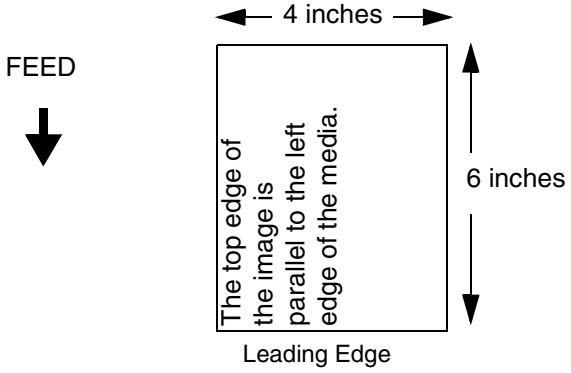
- **Portrait**. Portrait refers to vertical page orientation, where the height of a page is greater than its width. The top edge of the image is parallel to the leading edge of the media. The following illustration is an example, with the operator viewing the front of the printer.



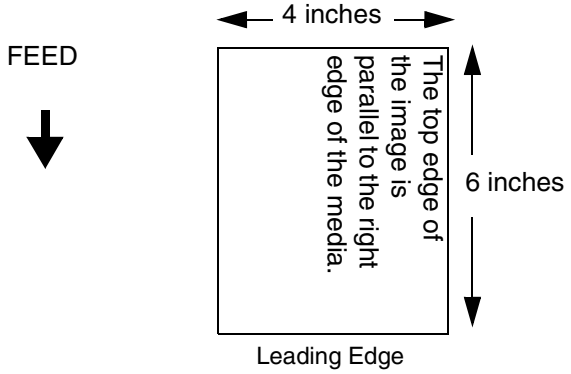
- **Inv. Portrait**. Inverse Portrait refers to vertical page orientation, where the height of a page is greater than its width. The top edge of the image is parallel to the trailing edge of the media. The following illustration is an example, with the operator viewing the front of the printer.



- **Landscape**. Landscape refers to horizontal orientation, where the width of a page is greater than its height. The top edge of the image is parallel to the left edge of the media. The following illustration is an example, with the operator viewing the front of the printer.



- **Inv. Landscape**. Inverse Landscape refers to horizontal orientation, where the width of a page is greater than its height. The top edge of the image is parallel to the right edge of the media. The following illustration is an example, with the operator viewing the front of the printer.



The factory default is Portrait.

Gap/Mark Sensor

The available options specify the sensor type needed for detecting the Top-of-Form position on media with label length indicators (gaps, notches, holes, or black marks).

- **Disable**. Select when using media with no label length indicators (no gaps, notches, holes, or black marks), or when you want the printer to ignore all existing label length indicators on the installed media.

NOTE: When you select Disable, the length of each label is based on the Label Length value entered in the QUICK SETUP or MEDIA CONTROL menu or the value sent via host software.

- **Mark**. Select when using media that has horizontal black marks located on the underside of the label liner or tag stock. The Top-of-Form position is the leading edge of the black mark.
- **Gap**. Select when using media with a liner space between die-cut labels or when using tag stock with notches or holes as label length indicators on white background media. The Top-of-Form position is the leading edge of the die cut label (trailing edge of the gap, notch, or hole).
- **Advanced Gap**. Select when using media that has liner gaps between die cut labels with black background. The Top-of-Form position is the leading edge of the die cut label (trailing edge of the gap, notch, or hole).
- **Advanced Notch**. Select when using media with notches or holes that interrupt a black vertical line on the underside of the media. The Top-of-Form position is the leading edge of the die cut label (trailing edge of the gap, notch, or hole).

The factory default is Disable.

Auto Calibrate

This feature is used to improve the sensitivity and reliability of the Media Sensor in detecting gaps, notches, holes, or black marks on the installed media, as well as a paper out condition.

Auto Calibrate can also be initiated from the TEST PRINT key, the CALIBRATE CTRL menu, or the DIAGNOSTIC menu. Press the ↵ key with “Auto Calibrate” displayed. The printer will then advance media the distance needed to accurately detect the label length indicators, then stop at the Top-of-Form position and momentarily display the Sensed Distance. The process takes a few seconds to complete. The end result will be a change to the Gap/Mark Threshold, Paper Out Threshold, and Sensed Distance values that the printer will use. The changes in values take effect immediately within the current configuration menu.

Auto Calibrate is completed successfully when the Sensed Distance displayed correctly matches that of the installed media. When Gap is selected, the Sensed Distance should match the length from the trailing edge of one gap to the trailing edge of the next gap (one label + one gap). When Mark is selected, the Sensed Distance should match the length from the leading edge of one black mark to the leading edge of the next black mark.

Auto Calibrate supports label lengths up to 24 inches.

Validator Funct.

This menu appears only if a validator is installed.

- **Enable**. The printer will command the validator to begin scanning and errors will be reported. The counters will be incremented while the validator is enabled.
- **Disable**.The printer will not command the validator to begin scanning and no errors will be reported. The counters will not be incremented while the validator is disabled.

NOTE: If you save a configuration with the validator enabled, then power down and power up, and the validator is not connected or not functioning, the error message “Validator not communicating” will display briefly. The Validator menu will not display.

If the validator is installed, the default is Enable.

Save Config.

This option allows you to save up to eight unique configurations to meet different print job requirements. This eliminates the need to change the parameter settings for each new job. The configurations are stored in memory and will not be lost if you turn off the printer. If the Protect Configs. parameter is enabled, the new configuration will not be saved unless the existing configuration has been deleted first. The factory default configuration cannot be changed. See “Saving A Configuration” on page 84 for details.

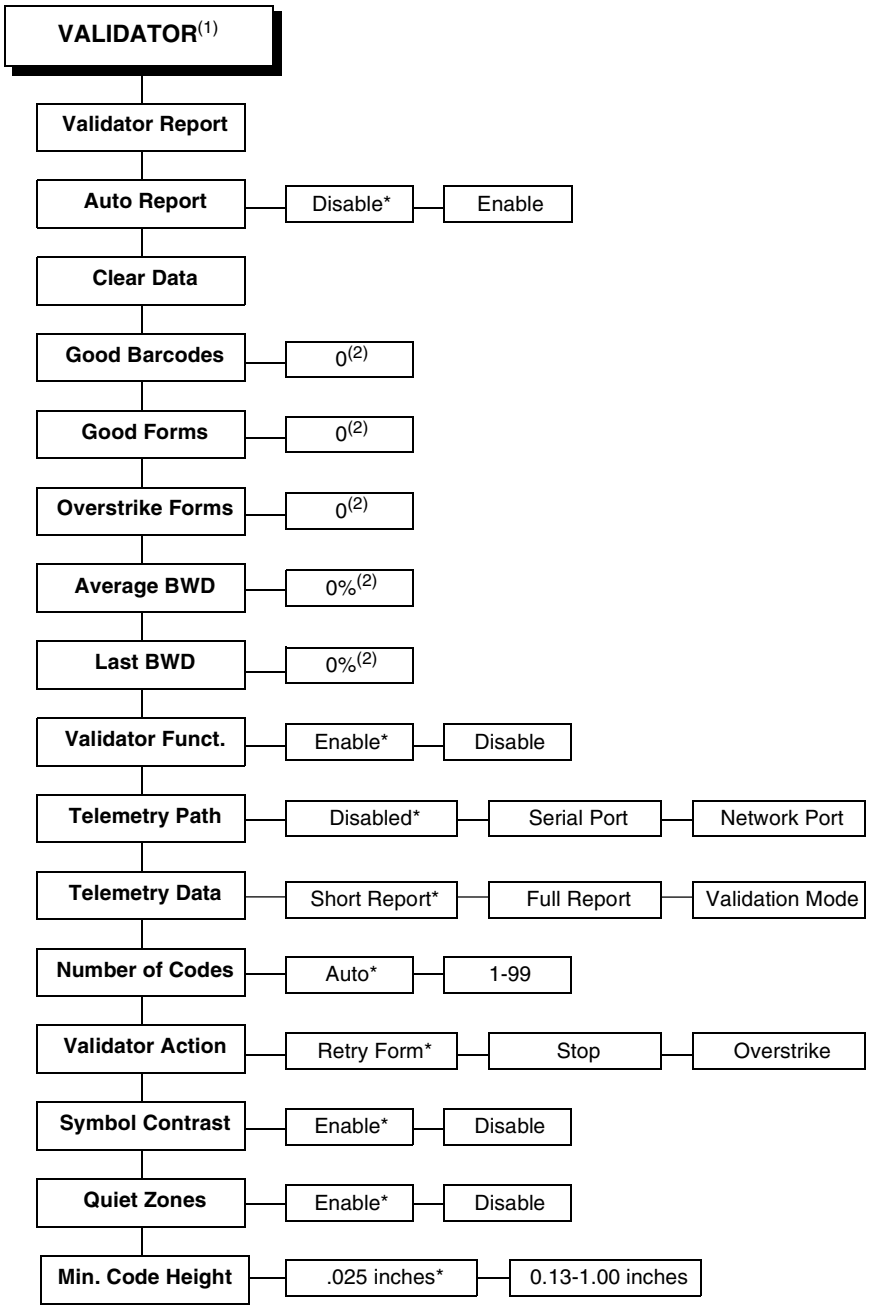
The factory default is 1.

Power-Up Config.

You can specify any one of nine configurations (1-8 saved custom configurations or Factory) as the power-up configuration.

The factory default is Factory.

VALIDATOR



Continued at the top of next page

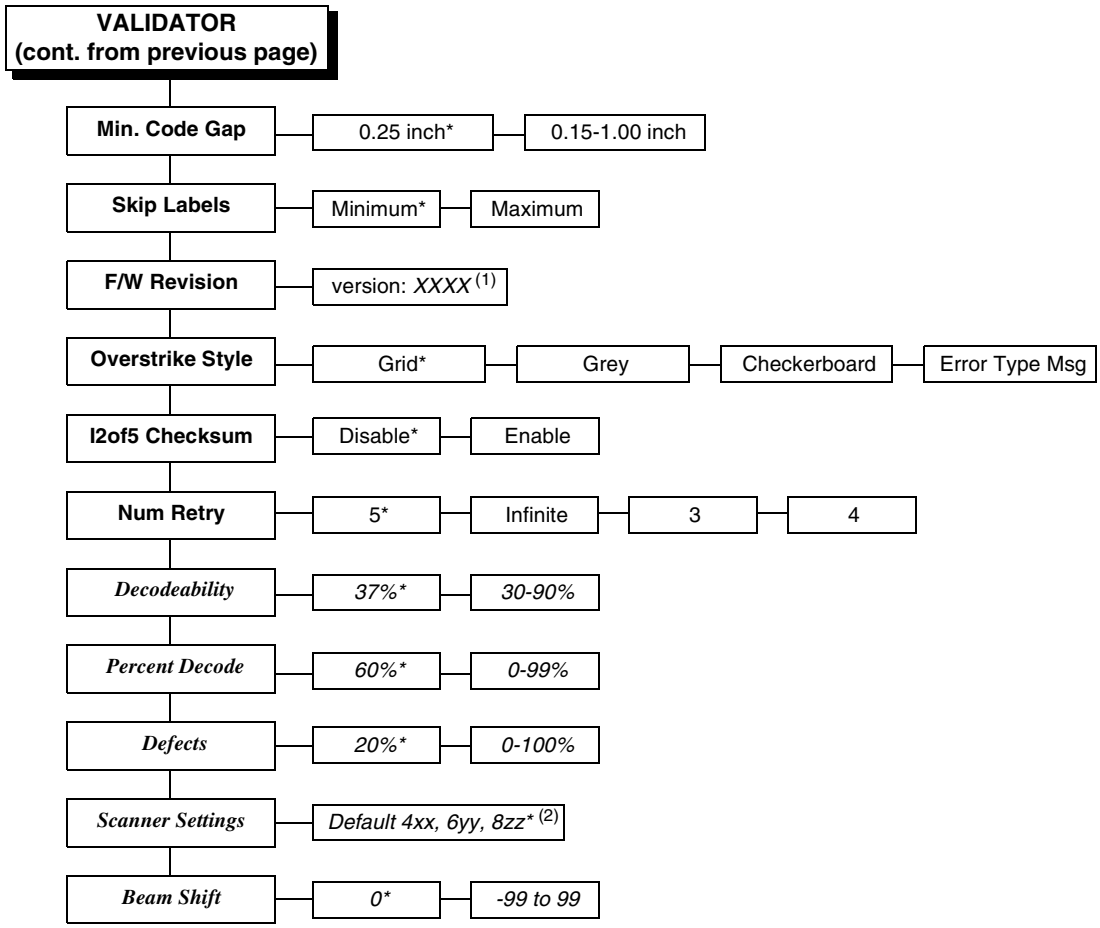
Notes:

* = Factory Default

Italicized items are available only when you enable Admin User (in the PRINTER CONTROL menu).

[1] This menu appears only if a validator is installed.

[2] You cannot change this value; it is a display item only.



Notes:

* = Factory Default

Italicized items are available only when you enable Admin User (in the PRINTER CONTROL menu).

[1] You cannot change this value; it is a display only item.

[2] Depends on printer model and custom files.
xx, yy, zz = file revision numbers.

VALIDATOR Submenus

NOTE: The Validator menu will only display on the control panel if a validator is installed.

Also, if you have previously enabled the validator and have stored a printer configuration and then you disconnect the validator, the LCD will display a warning that the validator is disabled.

For detailed information about the validator, please refer to the *Online Data Validator User's Manual.*

Validator Report

When selected, prints a report of the validation statistics since the printer was turned on or since the last data reset.

Auto Report

This option allows you to disable or enable an automatic validator report printout after a batch job. You can determine the end of a batch job in two ways:

- by using an Execute command to determine end of batch job, or
- a timeout of more than 10 seconds.

The options are Disable (the factory default) and Enable.

Clear Data

This item initiates an action. When selected, the printer will reset all defined validator counters. This action must be confirmed before the action is taken.

Good Barcodes

This is a display item only. It indicates the number of bar code reports sent from the validator since the last data clear operation. After a clear operation, the value is shown as zero.

Good Forms

This is a display item only. It indicates the number of good forms printed since the last data clear operation. A form is defined by the current height as set in the menus. After a clear operation, the value is shown as zero.

Overstrike Forms

This is a display item only. It indicates the number of overstrike/bad forms that contained a bar code that fell below the minimum acceptable level since the last data clear operation. If no data has been received since the last clear operation, this field will be zero.

Average BWD

This is a display item only. It indicates the average of all bar width deviations reported since the last reset. If no data has been received since the last clear operation, this field will be zero.

Last BWD

This is a display item only. It indicates the bar width deviation included in the most recent report received from the validator. If no data has been received since the last clear operation, this field will be zero.

Validator Funct.

This menu appears only if a validator is installed.

- **Enable**. The printer will command the validator to begin scanning and errors will be reported. The counters will be incremented while the validator is enabled.
- **Disable**.The printer will not command the validator to begin scanning and no errors will be reported. The counters will not be incremented while the validator is disabled.

NOTE: If you save a configuration with the validator enabled, then power down and power up, and the validator is not connected or not functioning, the error message “Validator not communicating” will display briefly. The Validator menu will not display.

If the validator is installed, the default is Enable.

Telemetry Path

This menu allows you to select whether or not the printer will out put the bar code analysis and underlying data from the validator. To enable this data, you must select the port through which the data will be transmitted.

The options are Disabled (the factory default), Serial Port, and Network Port.

Telemetry Data

This menu selects the type and amount of data the validator will report to the printer and subsequently the data the printer will make available through the telemetry report.

- **Short Report**. Provides the encoded failure cause or pass indication and the percent bar width deviation.
- **Full Report**. Provides a completed report of all the data captured by the validator. This report can be fed directly to the analysis software for capture and review.
- **Validation Mode**. Provides the same data as the Short Report, but adds the actual bar code data read.

The factory default is Short Report.

Number of Codes

This menu tells the printer how many codes to expect on a form. It is required in conditions where the host sends bitmapped graphics to the printer to produce bar codes. Therefore, the printer does not know how many codes to expect and cannot tell when a code is skipped. With this figure set to a specific number, the printer can check after a form has printed and passed the validator, whether or not it has received enough analysis reports. If it does not have at least as many reports as it expects, it can assume a gross bar code failure. When Auto is selected, the printer will only expect as many bar code analysis reports as bar codes printed using printer bar code commands.

The options are Auto (the factory default) and 1-99.

Validator Action

This menu defines the action the printer will take in the event of an error. See the *Validator User's Manual* for details.

The options are Retry Form (the factory default), Stop, and Overstrike.

Symbol Contrast

This item selects whether or not symbol contrast is included as part of the pass/fail criteria. The precise percentage to be sent to the validator is determined by the type of printing selected. See the table below.

The options are Enable (the factory default) and Disable.

Disable	= 0%
Thermal Transfer	= 40%
Direct Thermal	= 30%

Quiet Zones

This item enables or disables all checking of the quiet zones.

The options are Enable (the factory default) and Disable.

Min. Code Height

This menu tells the printer the closest vertical gap between bar codes that needs to be resolved. Refer to the Print/Slew Speed Limits for background information. The printer's ability to resolve which form contains the bad bar code is a function of print speed and the closeness of bar codes on separate forms. The default setting can resolve very small forms, but limits print speed. If you know that the bar codes are far enough apart and far enough from the bottom of a form, you can increase this value to allow for faster printing.

The range is 0.13 to 1.00 inches adjusted in .01 inch increments.
The factory default is 0.25 inches.

Min. Code Gap

Minimum Code Gap represents the distance between the closest barcodes within a print job. The distance is measured from the bottom of one barcode to the top of the next barcode. The closest barcodes can be located on two separate labels or on the same label. This distance is important because it affects how fast the Print Speed can be set. If the bottom most barcode on one label is very close to the top most barcode on the next label, the printer could have trouble distinguishing which barcode report correlates with which label. To avoid the risk of miscorrelation, the printer will limit its Print Speed.

The range is 0.15 to 1.00 inch adjusted in .01 inch increments.
The factory default is 0.25 inch.

Skip Labels

This menu allows you to select the number of labels skipped after an Overstrike occurs. The minimum is 0 to 1 label. The maximum is 1 to 2 labels.

The options are Minimum (the factory default) and Maximum.

F/W Revision

This is a display item only and indicates the firmware version of the validator.

Overstrike Style

This menu allows you to select different overstrike styles on bad labels.

The options are Grid (the factory default), Grey, Checkerboard, and Error Type Msg.

I2of5 Checksum

This option allows you to include or exclude the checksum option in I2of5 as part of the grading. For example, if this option is set to Enable, then any incoming barcode data without checksum digits will be graded as failure and CHECKSUM FAILURE will display on the LCD.

The options are Disable (the factory default) and Enable.

Num Retry

This option allows you to set a number of retries for overstrike before the printer stops printing and displays a fault message.

- **3, 4, or 5**: The printer stops after the specified number of retry attempts and displays a descriptive fault message on the LCD. When you clear the fault message (press the ENTER key with the VALIDATOR menu “Clear Data” option displayed), the printer stops trying to print the same label and begins printing the next label.

- **Infinite**: The printer stops after every 5 retry attempts and displays the appropriate fault message. When you clear the fault message, the printer continues to print the same label. It does not attempt to print the next label until the previous (problem) label is printed correctly.

The factory default is 5.

Decodeability

This item is an Admin User function and is used for adjustment of the pass/fail criteria.

The range is 30-90%, and the factory default is 37%.

Percent Decode

This item is an Admin User function and is used for adjustment of the pass/fail criteria.

The range is 0-99%, and the factory default is 60%.

Defects

This is an Admin User option. Defects are voids found in bars or spots found in the spaces or quiet zones of the bar codes. Voids, spots, smudges, and other defects in bar code symbols can yield poor scanning results, and will yield lower verification results.

Increasing the defects value will allow more defects per barcode before issuing a fail message.

Scanner Settings

This is an Admin User option and has two purposes:

- Allows the validator to upload an optimized setting for a particular printer model at power up. This will use the full scanner beam width and improve the performance and efficiency of the validator.
- Allows you to customize a special scanner setting for a specific application. The file can then be downloaded to the printer by using normal printer download modes and must be saved as part of the power up configuration.

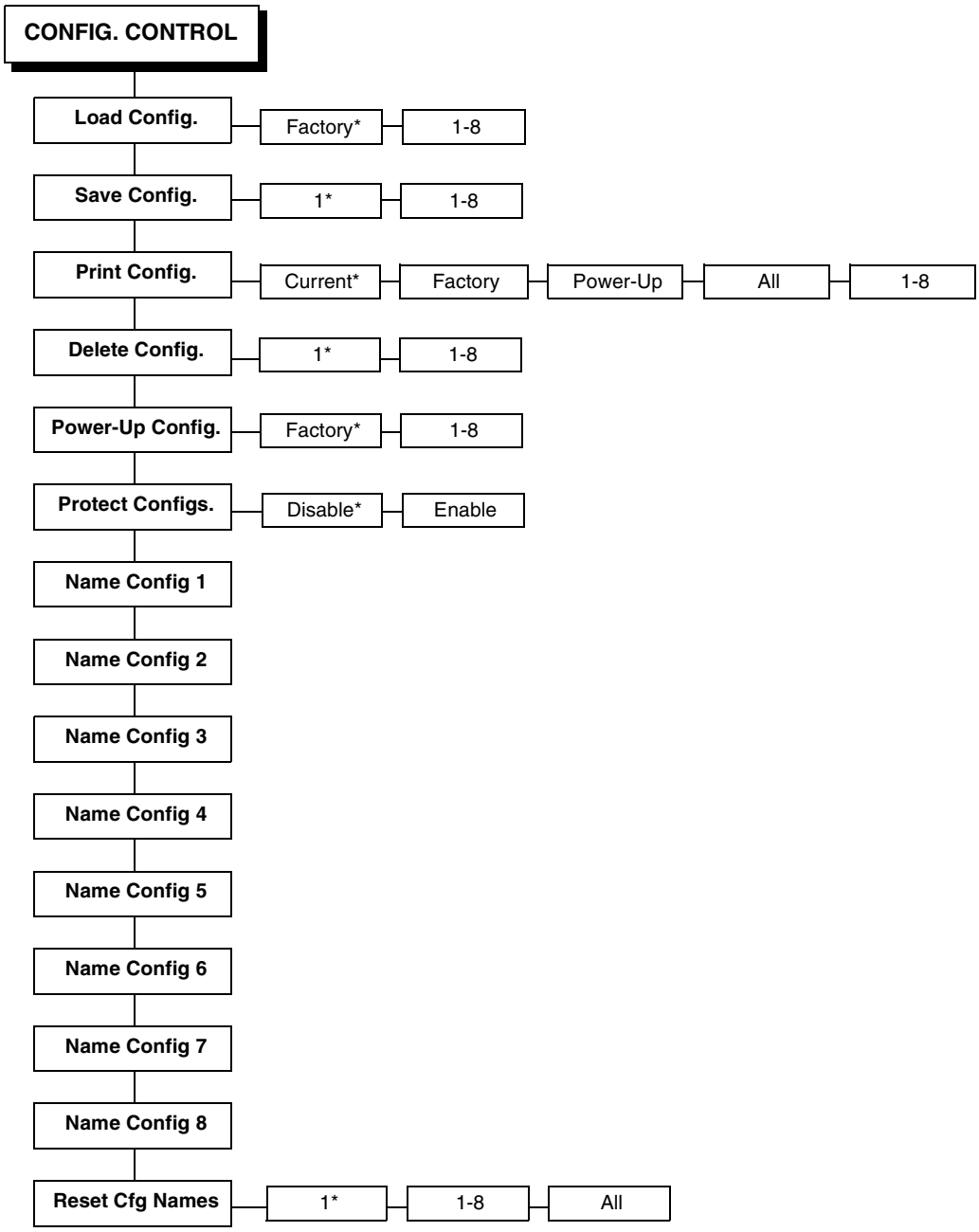
The factory default depends on the printer model and custom files.

Beam Shift

This is an Admin User option that enables you to shift the beam horizontally to the left or right. The left edge of the beam should be 0.13 inch to the left of the left edge of the tear bar. After you set this value, save it as part of the configuration for future use.

The range is -99 to 99, and the factory default is 0.

CONFIG. CONTROL



* = Factory Default

CONFIG. CONTROL Submenus

Load Config.

The printer can store up to eight configurations in memory. This parameter allows you to select and load a specific configuration.

The factory default is Factory.

Save Config.

This option allows you to save up to eight unique configurations to meet different print job requirements. This eliminates the need to change the parameter settings for each new job. The configurations are stored in memory and will not be lost if you turn off the printer. If the Protect Configs. parameter is enabled, the new configuration will not be saved unless the existing configuration has been deleted first. The factory default configuration cannot be changed. See “Saving A Configuration” on page 84 for details.

The factory default is 1.

Print Config.

This option is used to print a listing of various stored printer configurations. We recommend you store printouts of your configurations in a safe place for quick referral.

The options are Current (the factory default), Factory, Power-Up, and All.

Delete Config.

You can delete one or all of your eight customized configurations. The factory default configuration cannot be deleted.

The factory default is 1.

Power-Up Config.

You can specify any one of nine configurations (1-8 saved custom configurations or Factory) as the power-up configuration.

The factory default is Factory.

Protect Configs.

You can specify whether or not a new configuration should overwrite an existing configuration when you activate the Save Configs. parameter. When disabled (default), the new configuration will overwrite the existing configuration. When enabled, the new configuration will *not* overwrite the existing configuration, and the message “CONFIG. EXISTS / Delete First” displays.

The options are Disable (the factory default) and Enable.

Name Config (1-8)

You may specify a 15-character name which can be used to refer to a configuration. The name you enter for a configuration will be used in the Load Config., Save Config., Print Config., Delete Config., and Power-Up Config. menus. The names can only be cleared by using the Reset Cfg Names menu.

When you move into the Name Configs. menu, the top line of the display shows the current configuration name. The second line of the display is initially the same as the top line. You can modify the second line of the display without affecting the top line until the ↵ key is pressed, which sets the modified name as the current selection.

Press ↑ or ↓ to cycle through the values available for that character at the cursor location. Press + to move to the next character to be modified. Press – to go back to a character you have already modified. Continue until you have entered the name you want to give to this configuration, then press ↵ to save. The name you entered will now represent this configuration on the printer's front panel. To exit this menu without saving, press any key other than ↵. The configuration name will revert to the last saved value.

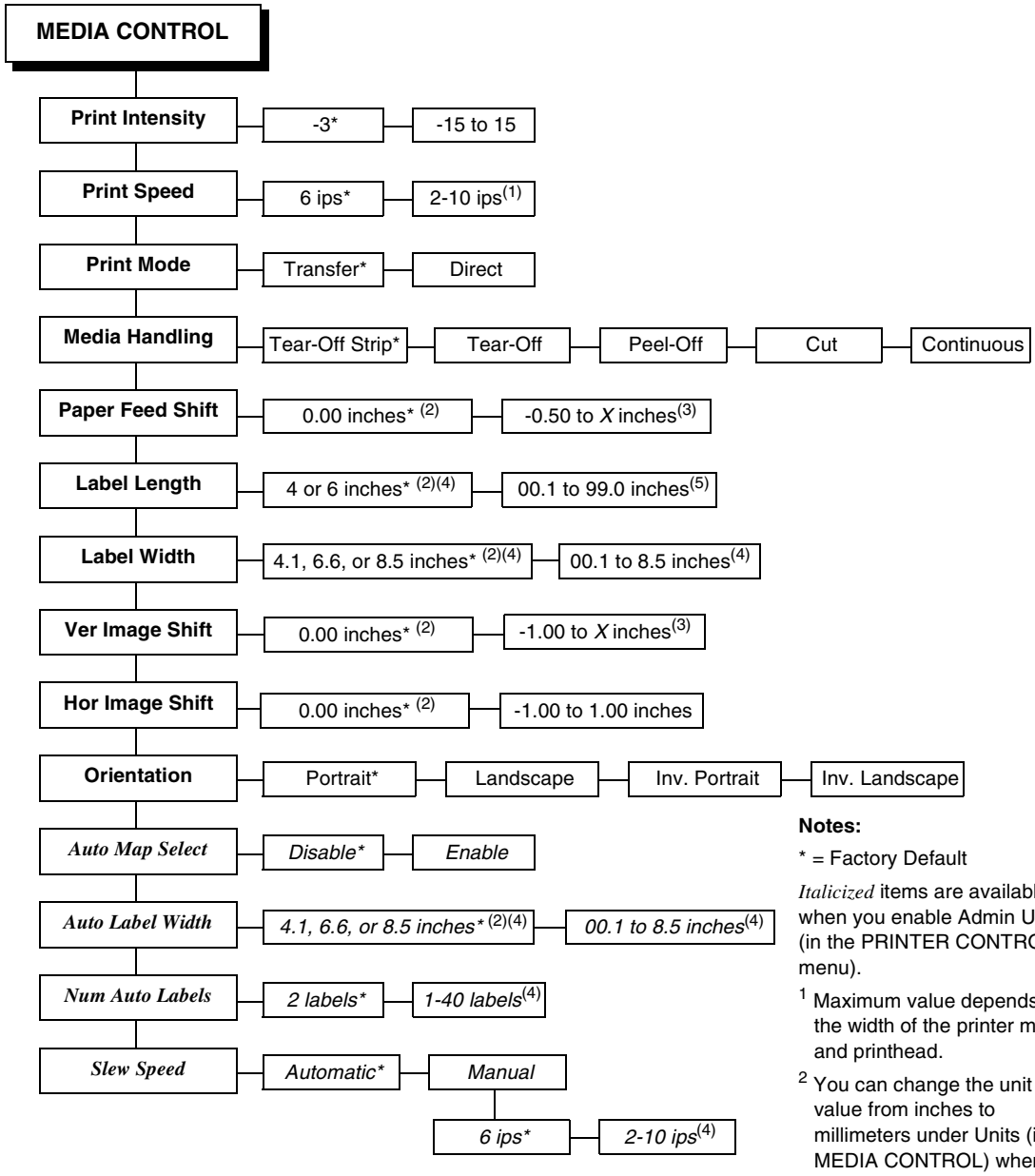
The factory default is 1.

Reset Cfg Names

You can reset specific configuration names back to the default value of the configuration number.

The options are 1-8 and All, and the factory default is 1.

MEDIA CONTROL



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Notes:

* = Factory Default

Italicized items are available when you enable Admin User (in the PRINTER CONTROL menu).

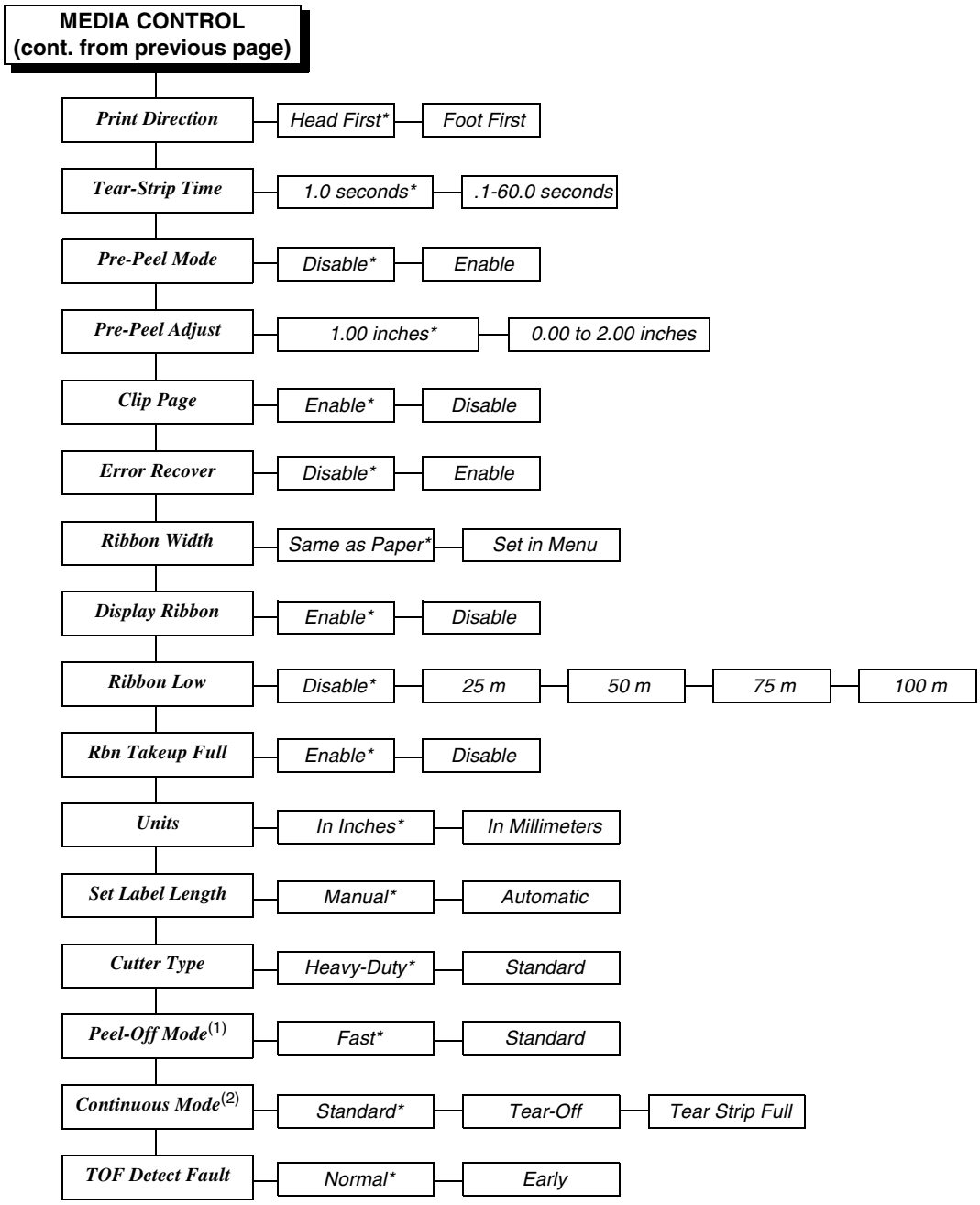
[1] Maximum value depends on the width of the printer model and printhead.

[2] You can change the unit value from inches to millimeters under Units (in MEDIA CONTROL) when Admin User is enabled.

[3] Based on the current value setting for Label Length (in MEDIA CONTROL) up to a maximum of 12.80 inches.

[4] Maximum value depends on the width of the printer model (see Appendix A, “Specifications”).

[5] Maximum value depends on model width and size of DRAM installed (see Appendix A, “Specifications”).



Notes:

* = Factory Default

Italicized items are available only when you enable Admin User (in the PRINTER CONTROL menu).

[1] The Peel-Off option under Media Handling must be enabled for this menu to function.

[2] The Continuous option under Media Handling must be enabled for this menu to function.

MEDIA CONTROL Submenus

Print Intensity

This option specifies the level of thermal energy from the printhead to be used for the type of media and ribbon installed.

Large numbers imply more heat (thermal energy) to be applied for each dot. This has a significant effect on print quality. The print intensity and speed must match the media and ribbon type to obtain the best possible print quality and barcode grades.

The range is -15 through +15:

- The factory default is -3 in Transfer mode.
- The factory default is 0 in Direct Thermal mode.

Print Speed

This option specifies the speed in inches per second (ips) at which the media passes through the printer while printing.

The range is 2 through 10 ips (in increments of 1 ips).

The factory default is 6 ips.

NOTE: The maximum print speed varies based on maximum printer width and dot per inch (dpi) resolution of the printhead installed (203 or 300 dpi). See Table 17 on page 323.

Print Mode

This option specifies the type of printing to be done.

- **Transfer**. Indicates Thermal Transfer printing (ribbon installed).
- **Direct**. Indicates Direct Thermal printing (no ribbon) and requires special heat sensitive media.

The factory default is Transfer.

Media Handling

This option specifies how the printer will handle the media (labels or tag stock).

- **Tear-Off Strip**. Printer prints on the media and sends it out the front until the print buffer is empty, then positions the last label over the tear bar for removal.
- **Tear-Off**. After each label is printed, the printer positions the label over the tear bar and waits for you to tear off the label before printing the next one (on-demand printing). A “Remove Label” message will display to remind you to remove the label before the next one can be printed.

- **Peel-Off**. Prints and peels die-cut labels from the liner without assistance. The printer waits for you to take away the label before printing the next one (on-demand printing). The label liner is rewound on the internal rewinder. A “Remove Label” message will display to remind you to remove the label before the next one can be printed.
- **Cut**. When the optional media cutter is installed, it automatically cuts media after each label is printed or after a specified number of labels have been printed when a software cut command has been issued. It cuts continuous roll paper, labels, or tag stock.
- **Continuous**. Printer prints on the media and sends it out the front.

The factory default is Tear-Off Strip.

Paper Feed Shift

This option represents the distance to advance (+ shift) or pull back (– shift) the stop position of a label when Tear-Off Strip, Tear-Off, Peel-Off, or Cut media handling option is enabled. The allowable range is -0.50 inches to the current Label Length value setting, up to a maximum of 12.80 inches, in .01 inch increments.

The factory default is 0.00 inches.

Label Length

This option specifies the user-selected Label Length in inches or millimeters. In most applications, the user-selected Label Length will match the *physical* label length. Physical label length is the actual label length of the media installed.

When setting label length, consider the following:

Label Length can be manually entered via the control panel MEDIA CONTROL menu or sent via host computer using the appropriate software command.

A Host Forms Length (Label Length) value sent from the host computer will override and change the manually entered Label Length value in the MEDIA CONTROL menu.

- **Physical Label Length** is the actual measurable length of the label. The following list of different media types explains how the physical label lengths are determined:
    - Die-cut labels – measurable length of the removable label (leading edge to trailing edge). This does not include the liner material or gap.
    - Tag Stock with notches or holes – measurable length from the trailing edge of one notch or hole to the leading edge of the next notch or hole.
    - Tag Stock with black marks on underside – measurable length from the leading edge of one black mark to the leading edge of the next black mark.

- Continuous media (no label length indicators) – measurable length should be within ± 1-2% the Label Length value entered in the MEDIA CONTROL menu or the value sent via host software command.

- **Logical Label Length** (Host Forms Length) is the length that a user or programmer bases his printable image on. In most cases this length should be slightly less than the Physical Label Length. This allows the entire image to be printed within the boundaries of the label length indicators (gaps, notches, holes, or black marks).

  When the Logical Label Length is greater than the Physical Label Length and Clip Page = Enable (in the MEDIA CONTROL menu), the printer will clip the bottom portion of the image that exceeds the Physical Label length. In this case, the printable data that was not printed will be lost.

  When the Logical Label Length is greater than the Physical Label Length and Clip Page = Disable, the printer will continue to print the image onto the next physical label and ignore the gap or mark based on the label length value set in the MEDIA CONTROL menu.

  When the Logical Label Length is less than the Physical Label Length, the printer will print the entire image and leave blank space the remaining length of the physical label as it advances to the Top-of-Form of the next label. This is true regardless of the Clip Page setting.

The allowable Label Length range is 00.1 to 99.0 inches (2.5 - 2514.6mm) The factory defaults are listed below:

Table 3. Factory Default Label Length

Printer	Inches	mm	Lines
T5X04	6	152.4	36
T5X06	4	101.6	24
T5X08	6	152.4	36

Maximum Label Length range is dependent on the Label Width value selected, printhead installed (203 or 300 DPI), and the amount of DRAM installed in the printer. See Appendix A for specifications.

NOTE: See “Set Label Length” on page 132.

Label Width

This option specifies the physical width of the image to be printed. The value can be specified in inches or millimeters depending on the setting of the Units submenu under the MEDIA CONTROL menu. The allowable range in inches is 00.1 to the maximum print width of the printer. The allowable range in millimeters is 2.5 to the maximum width of the printer.

The default value depends on model width and size of DRAM installed.

Ver Image Shift

This option specifies the amount to shift an image vertically up (-) or down (+) for precise positioning on the label. The actual height of the image is not affected by this parameter. The allowable range is -1.00 inches to the current Label Length value setting, up to a maximum of 12.80 inches, in .01 inch increments.

The factory default value is 0.00 inches.

Hor Image Shift

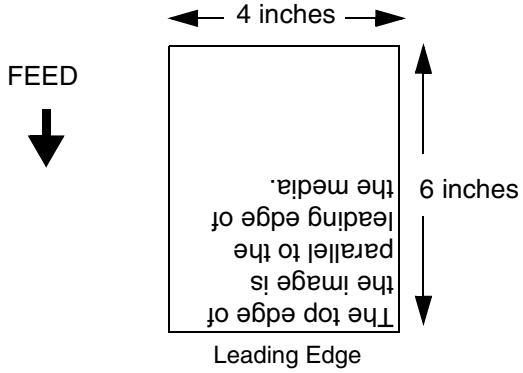
This option specifies the amount to shift an image horizontally left (-) or right (+) for precise positioning on the label. The actual width of the image is not affected by this parameter. The allowable range is -1.00 through +1.00 inches in .01 inch increments, displayed as *xx*/100.

The factory default value is 0.00 inches.

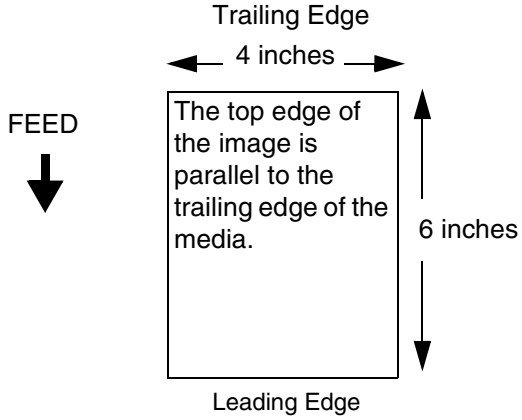
Orientation

This menu item selects the image orientation to be used when printing the label.

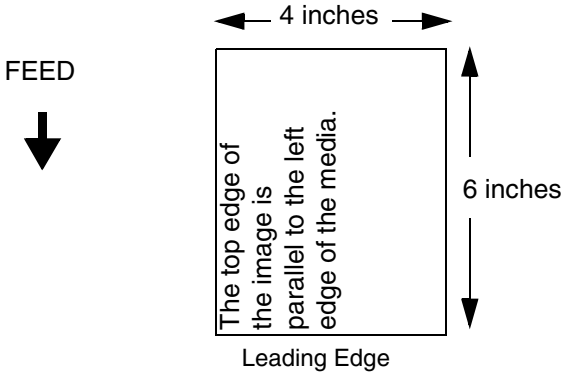
- **Portrait**. Portrait refers to vertical page orientation, where the height of a page is greater than its width. The top edge of the image is parallel to the leading edge of the media. The following illustration is an example, with the operator viewing the front of the printer.



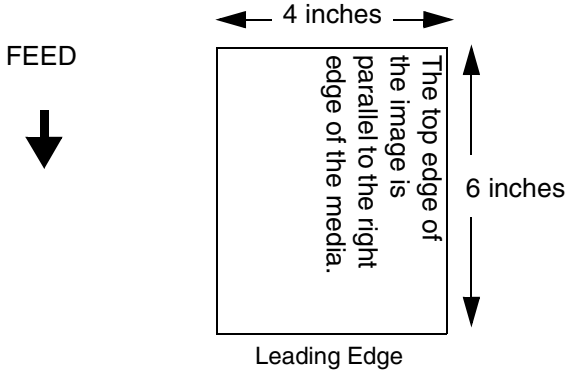
- **Inv. Portrait**. Inverse Portrait refers to vertical page orientation, where the height of a page is greater than its width. The top edge of the image is parallel to the trailing edge of the media. The following illustration is an example, with the operator viewing the front of the printer.



- **Landscape**. Landscape refers to horizontal orientation, where the width of a page is greater than its height. The top edge of the image is the left edge of the media. The following illustration is an example, with the operator viewing the front of the printer.



- **Inv. Landscape**. Inverse Landscape refers to horizontal orientation, where the width of a page is greater than its height. The top edge of the image is the right edge of the media (the left edge of the image is the trailing edge of the media). The following illustration is an example, with the operator viewing the front of the printer.



The factory default is Portrait.

Auto Map Select

This option specifies the maximum print width to be used by the application. The IGP/Auto Label Mapping® feature allows backward compatibility of programs written for P5000 line-matrix printers using the Printronix PGL graphics language. It allows the printer to print two-up (or other multi-up) labels. Instead of printing multiple labels across the printer, it prints the leftmost label and the rightmost label, so the printout will be twice as long but half as wide.

When enabled, the printer will automatically reposition the horizontally adjacent labels to a vertically adjacent position, or a combination of horizontal and vertical positions based on the values selected under the Auto Label Width and Num Auto Labels menu items.

When disabled, excess data in any program sent to the printer with horizontally adjacent labels that exceed the physical page width of the printer will be clipped or wrapped depending upon the setting of the Autowrap menu option.

The options are Disable (the factory default) and Enable.

Examples

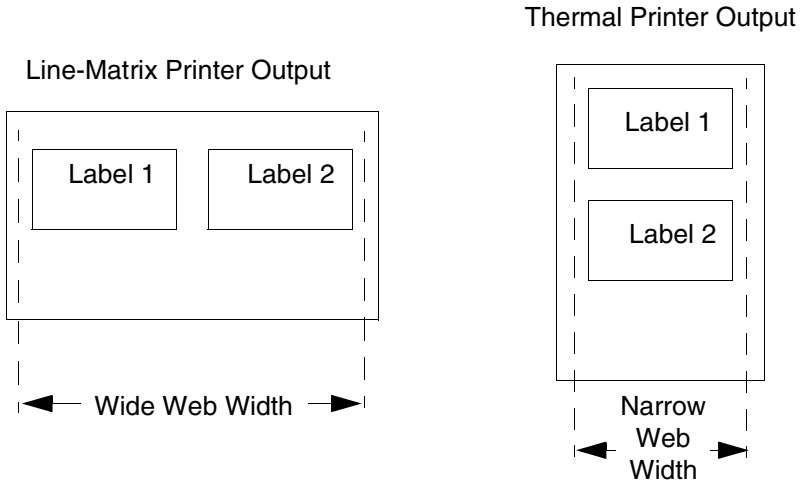
All of the examples below assume that the logical form length is set to the label length.

Example 1: Simple Case

Problem: A file has been constructed with two horizontally adjacent 4” labels for a printer with a physical width of 8”. The user now wants to use this file with a printer that has a 4” physical width.

Solution: The user sets Auto Label Width to 4” (the width of the label), configures the Num Auto Labels to 2, and enables the Auto Label Mapping feature.

Printer Operation: The printer will print the first (leftmost) 4” label first. Once the first label has been completed, the printer will print the second 4” label. These labels will appear vertically adjacent on the form.



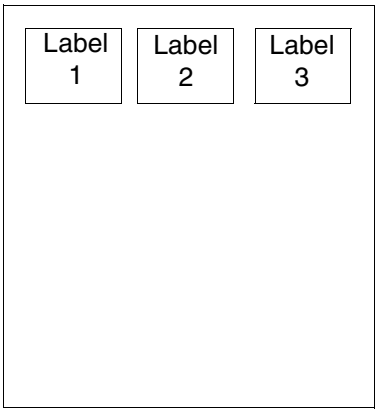
Example 2: Uneven Number Case

Problem: A file has been constructed with three horizontally adjacent 2” labels. The user now desires to use this file with a printer that has a 4” physical width.

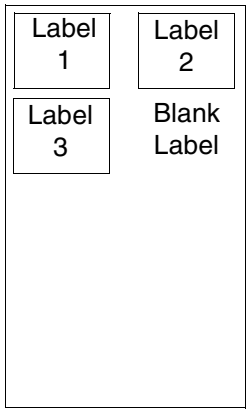
Solution #1: The user sets *Auto Label Width* to 4” (the width of two labels), configures the Num Auto Labels to 2, and enables the Auto Label Mapping feature.

Printer Operation for Solution #1: The printer will print the first two labels at the same time. These first two labels will be horizontally adjacent. Once these labels have been completed, the printer will print the remaining 2” labels along with a blank 2” label.

File Contents:

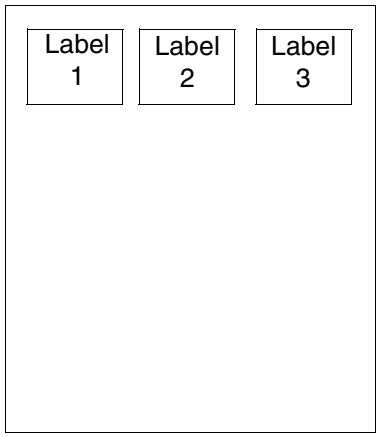


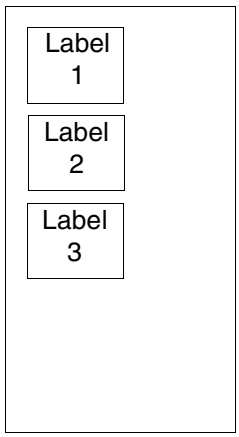
Print Output:



Solution #2: The user sets *Auto Label Width* to 2”, configures the Num Auto Labels to 3, and enables the Auto Label Mapping feature.

Printer Operation for Solution #2: The printer will print the first 2” label by itself, the second 2” label by itself, and finally, the last 2” label by itself.





Example 3: Past Maximum File Width

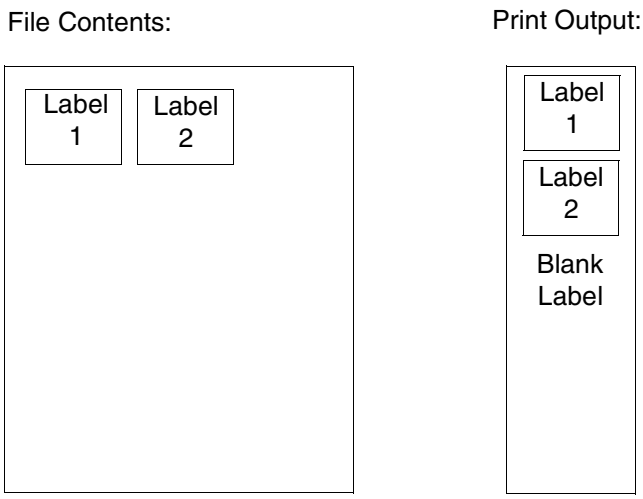
Problem: A file has been constructed with three horizontally adjacent 4" labels. The user now desires to use this file with a printer that has a 8" physical width. The user should have used a solution similar to one of the solutions in the section above, but the user erroneously enters an *Auto Label Width* of 12" and a *Num Auto Labels* of 3.

Printer Operation: *Maximum Num Auto Labels = (20"/12") = 1.67* rounded up to 2. The printer will automatically reduce the *Num Auto Labels* to 2.

Example 4: Blank Label Case

Problem: A file exists with two horizontally adjacent 4" labels. The user now wants to use this file with a printer that has a 4" physical width. The user decides to set the *Num Labels* to 3 and the *Label Width* to 4" despite the fact that these values are not optimum.

Printer Operation: The maximum *Num Auto Labels = (20"/4") = 5*. The selected value of 3 is legal. After the file is sent, the printer will begin by printing the first 4" width label. Once that label is complete, it will print the second 4" width label. Finally, once both of those labels have been printed, the printer will print a blank 4" label.



Auto Label Width

The width of a single label to be printed or the maximum width of the media that will be used for the print file. The value is selectable from 00.1 inch through the maximum print width of the printer.

NOTE: The maximum Auto Label Width value will be limited to the current MEDIA CONTROL/Label Width value selected in the configuration menu.

The default value depends on model width and size of DRAM installed.

Num Auto Labels

The desired number of labels to be printed vertically adjacent on the form. The value is selectable with a range of 1 through 40 (T5X04), 1 through 21 (T5X06) and 1 through 17 (T5X08).

The factory default is 2.

Slew Speed

The speed at which the printer moves media without actually printing on it.

- **Automatic**. Always the same as the print speed (see “Print Speed” on page 101).
- **Manual**. Allows you to set the slew speed. The maximum speed depends on your printer model (see Table 18 on page 337).

The default is Automatic.

Print Direction

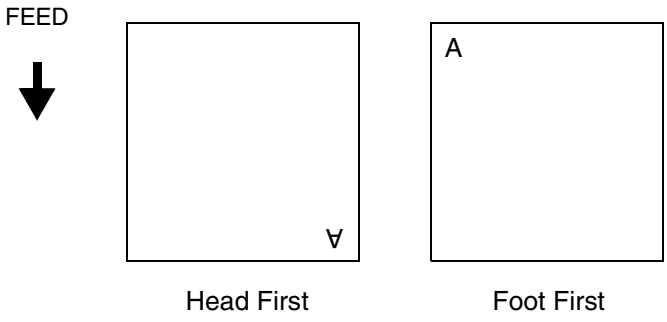
This option determines the basic print image orientation.

NOTE: Print Direction will not change the orientation of any print test patterns in the DIAGNOSTIC menu.

Print Direction has two options:

- Head First
- Foot First

For example, with Portrait orientation, when you select Head First, the top-of-form will come out of the printer first. Conversely, when you select Foot First, the bottom-of-form will come out first.



Print Direction and Orientation are two independent options that can be combined to produce the following results depending on the Active IGP Emulation:

Table 4. Head First

Print Direction Option	Orientation Option	Result in Active IGP Emulations (IGP/PGL or IGP/VGL)
Head First	Portrait	Portrait
Head First	Landscape	Landscape
Head First	Inv. Portrait	Inv. Portrait
Head First	Inv. Landscape	Inv. Landscape

Table 5. Foot First

Print Direction Option	Orientation Option	Result in Active IGP/PPI1 Emulation
Foot First	Portrait	Portrait
Foot First	Landscape	Inv. Landscape
Foot First	Inv. Portrait	Inv. Portrait
Foot First	Inv. Landscape	Landscape

The factory default is Head First when IGP/PGL or IGP/VGL is enabled.

The factory default is Foot First when PPI1 is enabled.

Tear-Strip Time

When Media Handling is set to Tear-Off Strip or when Media Handling is set to Continuous and Continuous Mode is set to Tear Strip Full, Tear-Strip Time specifies the number of seconds after the buffer is empty that the printer will wait before it advances media to the tear bar position.

The range is .1-60.0 seconds, and the factory default is 1.0 second.

Pre-Peel Mode

- **Disable**.
- **Enable**. When using Peel-Off Media Handling, enabling Pre-Peel Mode adds a forward and reverse motion to each label prior to printing. The added forward pre-peel motion temporarily breaks the die cut label from the liner, and the reverse motion places the label back on the liner prior to printing, peeling, or dispensing the label. Pre-Peel Mode is usually enabled only when using die cut labels with an aggressive adhesive that makes automatic label removal from the liner difficult.

The factory default is Disable.

Pre-Peel Adjust

Pre-Peel Adjust represents the selectable distance that the label advances during Pre-Peel Mode. The Pre-Peel Adjust distance selected is automatically used when Pre-Peel Mode is enabled.

The range is 0.00 to 2.00 inches in .01 inch increments.
The factory default is 1.00 inch.

Clip Page

This option determines how the printer handles images that are too large for one physical page length when using gap or black mark media.

- **Enable**. When the user-selected page length is greater than the physical page length, the printer clips the excess data to fit the physical page. The excess data is lost. The media sensor constantly looks for the gap, notch, hole, or black mark and when detected, uses it as the Top-of-Form position for the next label and clips any remaining data from the label being printed.
- **Disable**. When the user-selected page length (logical length) is greater than the physical page length dictated by the gap, notch, hole, or black mark on media, the printer continues to print the remaining excess data onto the next physical page.

  The media sensor looks for the gap, notch, hole, or black mark only after the media has advanced the distance specified by the Label Length value in the MEDIA CONTROL menu or by the Host Forms Length value sent via the software. Any gaps, notches, holes, or black marks that exist prior to reaching the Label Length or Host Forms Length value are ignored.

  When Clip Page is set to Disable, Mark and Gap media sensing reliability can be improved and the sensor problems described below can be fixed:

  - The image starts to print at an erroneous distance from the top-of-form, especially towards the end of a roll where the media is severely curled or scalloped.
  - The image is incorrectly positioned as a result of the media sensor triggering off of a dark, pre-printed image on the label or multiple gaps within the label.
  - The printer starts to print one label and then another all on the same physical label, especially at the end of a roll where the media is severely curled.
  - An occasional blank label appears within a print job (in between printed labels).

  When Clip Page is set to Disable, the printer ignores any pre-printed dark marks or multiple gaps on a label that could mistakenly be detected as the next top-of-form position based on the specified Label Length value. The Label Length option is in the MEDIA CONTROL menu.

NOTE: When Clip Page = Disable, the correct Label Length value must be entered. If the value is too long, the printer will ignore the actual gap or mark it needs to detect. When using Gap sensing, the Label

Length value is equal to the physical length of a die cut or removable label. When using Mark sensing, the Label Length value is the physical distance from the leading edge of one black mark to the leading edge of the next black mark.

The factory default for Clip Page is Enable.

Error Recover

This option determines how the printer handles data that was printing when an error occurred.

- **Disable**. The printer will not reprint the label that was printing when the error condition occurred.
- **Enable**. The printer reprints the label that was printing when the error condition occurred.

The factory default is Disable.

Ribbon Width

When Same As Paper is selected, the printer automatically adjusts the ribbon operating parameters to match the installed media width. In those cases where the media width is less than the installed ribbon width, the Set In Menu option should be selected. After selection, the ribbon width is set to the proper value by pressing the ↓ key and choosing the actual ribbon width using the + and – keys. The chosen width is then selected by pressing the ↵ key. The factory default is Same As Paper.

Display Ribbon

When enabled, the remaining length of unused ribbon will display on the LCD (when the printer is online).

The options are Enable (the factory default) and Disable.

Ribbon Low

This item defines the Ribbon Low condition for the ribbon supply spindle. When set to a specific value, a ribbon low message will display along with a flashing ONLINE status indicator to indicate the length of ribbon remaining on the ribbon supply spindle has reached its specified value. The indicator will continue to flash until the ribbon supply is exhausted. When Disabled, no ribbon low condition will be indicated. A Ribbon Low condition will not prevent printing.

The options are Disable, 25m, 50m, 75m, and 100m.
The factory default is Disable.

Rbn Takeup Full

This enables or disables a fault message to display for a Ribbon Takeup Full condition.

The options are Enable (the factory default) and Disable.

Units

This item selects either millimeters or inches as the unit of measure.

The options are In Inches (the factory default) and In Millimeters.

Set Label Length

This feature selects whether the Sensed Distance value derived from an Auto or Manual Calibrate will be used to set the Label Length value in the MEDIA CONTROL menu (and the QUICK SETUP menu).

- **Manual**: The Sensed Distance value derived from an Auto or Manual Calibrate **will not override** or change the Label Length value.
- **Automatic**: When an Auto or Manual Calibrate is performed, the Sensed Distance value derived from either calibrate **will override** and change the Label Length value. If no Auto or Manual Calibrate is performed, the current Label Length value will be used.

The factory default is Manual.

NOTE: When Set Label Length = Automatic and Gap/Mark Sensor = Gap, Advanced Gap, or Advanced Notch, the printer will subtract the Gap Length value (in the CALIBRATE CTRL menu) from the Sensed Distance value obtained when the Auto or Manual Calibrate was performed.

Cutter Type

- **Heavy Duty**. Heavy duty cutter timing, cut position, and fault messages are used.
- **Standard**. Standard-duty cutter timing and cut position are used.

The factory default is Heavy Duty.

Peel-Off Mode

When Peel-Off Media Handling mode (see page 120) is enabled, this feature allows selection of two different media motions for automatic label peel-off.

- **Fast**. Reverse and forward media motion distance in Peel-Off mode is reduced, providing faster throughput. Primarily used for label lengths less than 2 inches long.
- **Standard**. Provides standard reverse and forward media motion distance in Peel-Off mode to ensure sufficient rewinder tension.

The factory default is Fast.

Continuous Mode

Allows selection of special media modes when Continuous Media Handling mode (see page 120) is selected.

- **Standard**. Labels are printed and sent out the front. The cross perforation following the last printed label is aligned at the tear bar. No auto feeding of a blank label should exist between print jobs, but you may need to press the FEED key to move approximately .80 inches of the last printed label from under the printhead. If performed, this feed causes a blank label at the beginning of the next print job.
- **Tear-Off**. Same as Standard, but the cross perforation following the last printed label is aligned at the tear bar. No blank label is needed to remove the last printed label. No blank label should exist between print jobs. A print zone, .80 inches long, exists from the leading edge of each printed label. This option supports label lengths 2.50 inches or longer.
- **Tear Strip Full**. Same as Standard, but the cross perforation following the last printed label is automatically aligned at the tear bar once the print buffer is empty for a period of Tear-Strip Time. (Media does not get aligned at tear bar until Tear-Strip Time expires.) When printable data is again detected, a blank label is automatically fed, resulting in one blank label between each print job. This option supports label lengths 2.50 inches or longer. Shorter label lengths cause two or more blank labels to be automatically fed at the beginning of each print job.

The factory default is Standard.

TOF Detect Fault

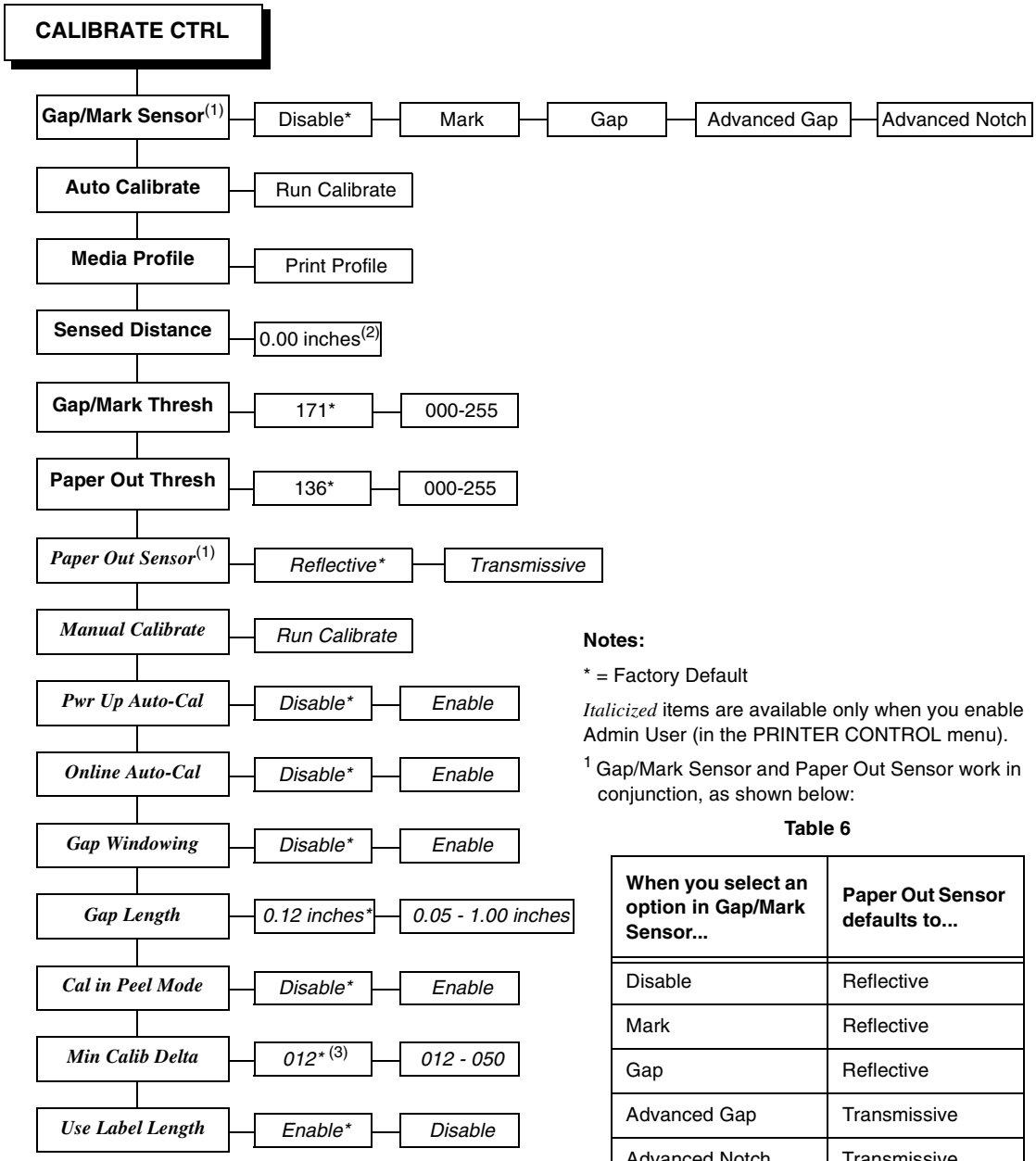
Allows selection of two different TOF (Top-of-Form) detection faults.

NOTE: The correct Label Length value, equal to the physical length of the installed label, must be entered in the QUICK SETUP or MEDIA CONTROL menu.

- **Normal**. The printer displays a Gap Not Detected fault and stops printing when media has advanced a distance equal to twice the Label Length value set in the menu.
- **Early**. The printer displays a Gap Not Detected fault and stops printing when media has advanced a distance equal to the Label Length value set in the menu.

The factory default is Normal.

CALIBRATE CTRL



Notes:

* = Factory Default

Italicized items are available only when you enable Admin User (in the PRINTER CONTROL menu).

[1] Gap/Mark Sensor and Paper Out Sensor work in conjunction, as shown below:

Table 6

When you select an option in Gap/Mark Sensor...	Paper Out Sensor defaults to...
Disable	Reflective
Mark	Reflective
Gap	Reflective
Advanced Gap	Transmissive
Advanced Notch	Transmissive

If you change the Gap/Mark Sensor or Paper Out Sensor, you must recalibrate the media.

[2] When Admin User is enabled (in the PRINTER CONTROL menu), you can change the unit value to millimeters: Under the Units submenu (in the MEDIA CONTROL menu), enable the “In Millimeters” option.

[3] When Gap/Mark Sensor = Disable, Gap, or Mark, the default is 12. When Gap/Mark Sensor = Advanced Gap or Advanced Notch, the default is 20.

CALIBRATE CTRL Submenus

Gap/Mark Sensor

The available options specify the sensor type needed for detecting the Top-of-Form position on media with label length indicators (gaps, notches, holes, or black marks).

- **Disable**. Select when using media with no label length indicators (no gaps, notches, holes, or black marks), or when you want the printer to ignore all existing label length indicators on the installed media.

NOTE: When you select Disable, the length of each label is based on the Label Length value entered in the MEDIA CONTROL menu or the value sent via host software.

- **Mark**. Select when using media that has horizontal black marks located on the underside of the label liner or tag stock. The Top-of-Form position is the leading edge of the black mark.
- **Gap**. Select when using media with a liner space between die-cut labels or when using tag stock with notches or holes as label length indicators on white background media. The Top-of-Form position is the leading edge of the die cut label (trailing edge of the gap, notch, or hole).
- **Advanced Gap**. Select when using media that has liner gaps between die cut labels with black background. The Top-of-Form position is the leading edge of the die cut label (trailing edge of the gap, notch, or hole).
- **Advanced Notch**. Select when using media with notches or holes that interrupt a black vertical line on the underside of the media. The Top-of-Form position is the leading edge of the die cut label (trailing edge of the gap, notch, or hole).

The factory default is Disable.

Auto Calibrate

This feature is used to improve the sensitivity and reliability of the Media Sensor in detecting gaps, notches, holes, or black marks on the installed media, as well as a paper out condition.

You can initiate Auto Calibrate from the TEST PRINT key, the CALIBRATE CTRL menu, or the DIAGNOSTIC menu. When “Auto Calibrate” displays on the LCD, press the ↵ key. The printer advances media the distance needed to accurately detect the label length indicators, then stops at the Top-of-Form position, and momentarily displays the Sensed Distance. This process takes a few seconds to complete and results in changes to the values the printer uses for Gap/Mark Threshold, Paper Out Threshold, and Sensed Distance. These value changes take effect immediately within the current configuration menu.

Auto Calibrate is completed successfully when the Sensed Distance displayed correctly matches that of the installed media. When Gap is selected, the Sensed Distance should match the length from the trailing edge of one gap to the trailing edge of the next gap (one label + one gap). When

Mark is selected, the Sensed Distance should match the length from the leading edge of one black mark to the leading edge of the next black mark.

Auto Calibrate supports label lengths up to 24 inches.

Media Profile

This feature provides a graphical printout showing the relationship of the Paper Out Threshold and the Gap/Mark Threshold. The profile printout assists you in setting the thresholds for difficult media. This includes pre-printed labels, and labels with poor gap/media dynamic range.

When selected, the printer will advance media and print the media profile along the length of each label. The printer will continue to print the profile until you press ↵.

The factory default is Print Profile.

Sensed Distance

This value (in inches) represents the distance that was sensed between the TOF of one label to the TOF of the next label. With gapped media installed, the distance equals the physical label length plus one gap, notch, or hole (trailing edge of one gap, notch, or hole to the trailing edge of the next gap, notch, or hole). With black mark media installed, the distance equals the leading edge of one black mark to the leading edge of the next. This value is automatically determined only after successful completion of Auto or Manual Calibrate and cannot be changed manually.

The factory default is 0.00 inches.

Gap/Mark Thresh

This menu item sets a value that, when exceeded by the output of the media sensor, is recognized by the printer as a gap (or black mark). When Auto or Manual Paper Calibrate is performed, the value displayed is equal to the gap/mark threshold value set by this procedure. If running the procedure does not provide a reliable Top-Of-Form detection, e.g., when using unusual media, the Gap/Mark Thresh value can be manually set to the desired value.

The range is 000-255, and the factory default is 171.

Paper Out Thresh

This menu item selects a value that, when exceeded by the output of the media sensor, is recognized by the printer as a paper out condition. When Auto or Manual Calibrate is performed, the value displayed is equal to the paper out threshold value set by this procedure. If running the procedure does not provide a reliable paper out detection, e.g., when using non-standard media, the Paper Out Thresh value can be manually set to the desired value.

The range is 000-255, and the factory default is 136.

Paper Out Sensor

Selects which type of media sensing, Reflective or Transmissive, will be used to detect a paper out condition. The printer automatically selects the type of sensing based on the Gap/Mark sensing selected (see Table 6 on page 134).

NOTE: Whenever you select Transmissive, you must position the upper media sensor directly over the lower media sensor (see “Positioning The Media Sensors” on page 68).

The factory default is Reflective.

Manual Calibrate

Manual Calibrate is another method of improving the printer’s media sensing and is only used when Auto Calibrate has failed or the Gap/Mark Threshold or Paper Out Threshold values derived from Auto Calibrate do not improve the media sensors’ gap or mark sensing capability.

To initiate Manual Calibrate, press ↵ when “Manual Calibrate” displays under the CALIBRATE CTRL menu. You will then be prompted for the remaining steps.

Example: “REMOVE RBN&MEDIA/Press Enter” or
“LOAD RBN ONLY/Press Enter” etc.

During the last stage of Manual Calibrate, the printer uses the statically derived values, advances media, stops at the Top-of-Form position, and momentarily displays the Sensed Distance. This process takes longer than Auto Calibrate, and the end result is a change to the Gap/Mark Threshold, Paper Out Threshold, and Sensed Distance values that the printer will use. These value changes take effect immediately within the current configuration menu.

Manual Calibrate is completed successfully when the displayed Sensed Distance correctly matches that of the installed media. When Gap is selected, the Sensed Distance should match the length from the trailing edge of one gap to the trailing edge of the next gap (or one label + one gap). When Mark is selected, the Sensed Distance should match the length from the leading edge of one black mark to the leading edge of the next black mark.

Manual Calibrate supports label lengths up to 24 inches.

Pwr Up Auto-Cal

- **Disable**.
- **Enable**. When the printer is first powered on, it will complete its initialization and self-tests and then perform an Auto Calibrate. Once the Auto Calibrate is complete, the printer will momentarily display the Sensed Distance determined by the Auto Calibrate.

The factory default is Disable.

Online Auto-Cal

NOTE: Online Auto-Cal will not function when the validator is enabled or when Error Recover (under MEDIA CONTROL) is enabled (see page 131).

The options for Online Auto-Cal are:

- **Disable**.
- **Enable**. Whenever the printer is brought online, it automatically performs an Auto Calibrate (see “Auto Calibrate” on page 135). Once the Auto Calibrate is complete, the printer momentarily displays the Sensed Distance determined by the Auto Calibrate and then resumes printing any pending jobs.

NOTE: If using the Online Auto-Cal feature, you must first enable it prior to printing any data.

The factory default is Disable.

Gap Windowing

This feature compensates for any early falling edges or spurious peaks and troughs that may appear within the gap length in media. These edges or peaks and troughs can cause unreliable detection of the leading edge of the next label (top-of-form). Use Gap Windowing to resolve the following problems:

- Loss of one or more complete (serialized) labels.
- Start of an image printed in the middle of a gap, especially with fanfold, perforated media.
- Top part of an image lost when printing in head-first orientation.

The options for Gap Windowing are Enable and Disable:

- **Enable**. When the leading edge of a gap is detected, the printer ignores the first 90% of the gap length value specified in the Gap Length menu option. The result is that cross perforations or unusual media discrepancies within the gap are filtered out, allowing the printer to reliably detect the actual leading edge of the next label and use it as the TOF position.
- **Disable**. When the leading edge of a gap is detected, the printer continuously looks for the leading edge of the next label and uses it as the TOF position. Perforations or unusual media discrepancies within the gap can cause inaccurate TOF detection.

The factory default is Disable.

Gap Length

Gap Length is the actual length (height) of a label gap measured in .01 inch increments. The range is 0.05 to 1.00 inches.

NOTE: You must enter the correct Gap Length. If the Gap Length is too long, the image will shift down from the leading edge (TOF) of the label.

The factory default is 0.12 inches.

Cal in Peel Mode

This option allows you to perform a calibration (Auto Calibrate or Pwr Up Auto-Cal) in Peel-Off Media Handling mode.

- **Enable**. Auto Calibrate can be performed from the front panel, and if the Pwr Up Auto-Cal option is enabled, calibration will be performed at power up.

NOTE: Calibration in Peel-Off mode does not stop and wait for you to remove peeled labels. Therefore, be prepared to remove the labels as they are automatically peeled.

- **Disable**. The printer will not permit calibration and a "CANNOT CALIBRATE/Disable Peel-Off" message will briefly display. Additionally, if "Pwr Up Auto-Cal" is enabled, the printer will not perform calibration at power up.

The factory default is Disable.

Min Calib Delta

Minimum Calibrate Delta changes the minimum threshold value the sensor(s) require to detect the difference between the label and a gap, notch, hole or black mark. This allows bolder gaps (such as notches or holes) to be used as the TOF while intermediate gaps (liner) can be ignored. Increasing the Min Calib Delta makes the sensor(s) less sensitive to intermediate gaps and noise. Decreasing the Min Calib Delta makes the sensor(s) more sensitive for detecting gaps on low contrast media, where there is very little difference between the label and the gap (liner).

The range is 012 - 050.

NOTE: When Gap/Mark Sensor = Disable, Gap, or Mark, the default is 12. When Gap/Mark Sensor = Advanced Gap or Advanced Notch, the default is 20.

Use Label Length

Determines whether or not the Label Length value set in the QUICK SETUP or MEDIA CONTROL menu is used during Auto Calibrate.

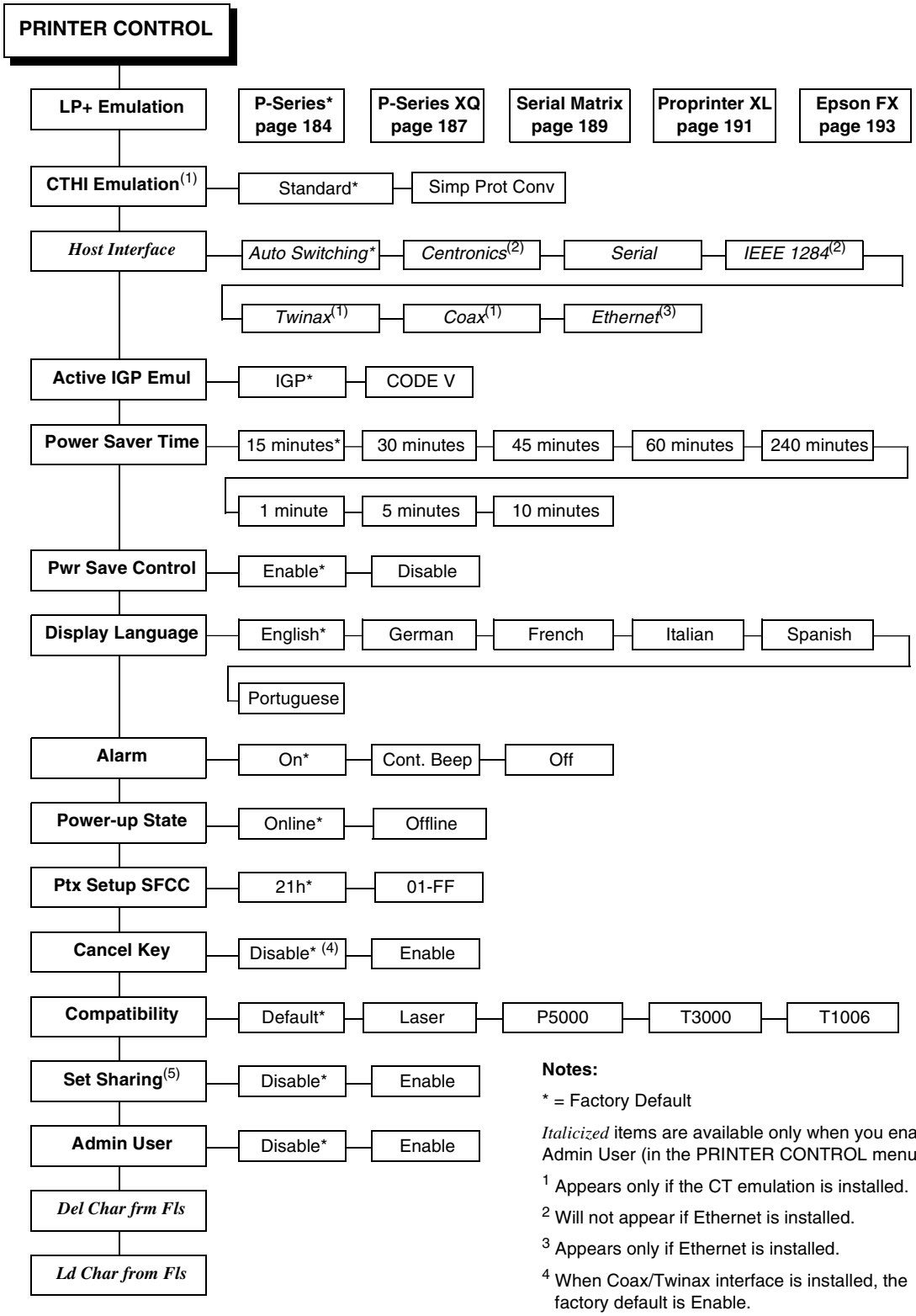
- **Enable**. The Label Length value set in the QUICK SETUP or MEDIA CONTROL menu is used in the calibrate algorithm. This causes the Auto Calibrate process to advance media the minimum distance required to detect the true gap, notch, hole, or black mark used for TOF (Top-of-Form) sensing. This resolves problems where the sensor(s) may mistake high noise levels or preprinted images within the label as the gap, notch, hole, or black mark that could result in a sensed distance value much shorter than the actual label length. Example: A 0.2 inch calibrated Sensed Distance with a 3.0 inch long label installed.

NOTE: Setting the Label Length value less than half the actual length of the label in use will result in erroneous Sensed Distance values when Auto Calibrate is performed.

- **Disable**. Auto Calibrate relies exclusively in its ability to detect varying transitions between labels and gaps, notches, holes, or black marks while advancing media during the calibrate process to determine Sensed Distance. The amount of media advanced is based on the number of transitions detected.

The factory default is Enable.

PRINTER CONTROL



Continued at the top of next page

Notes:

* = Factory Default

Italicized items are available only when you enable Admin User (in the PRINTER CONTROL menu).

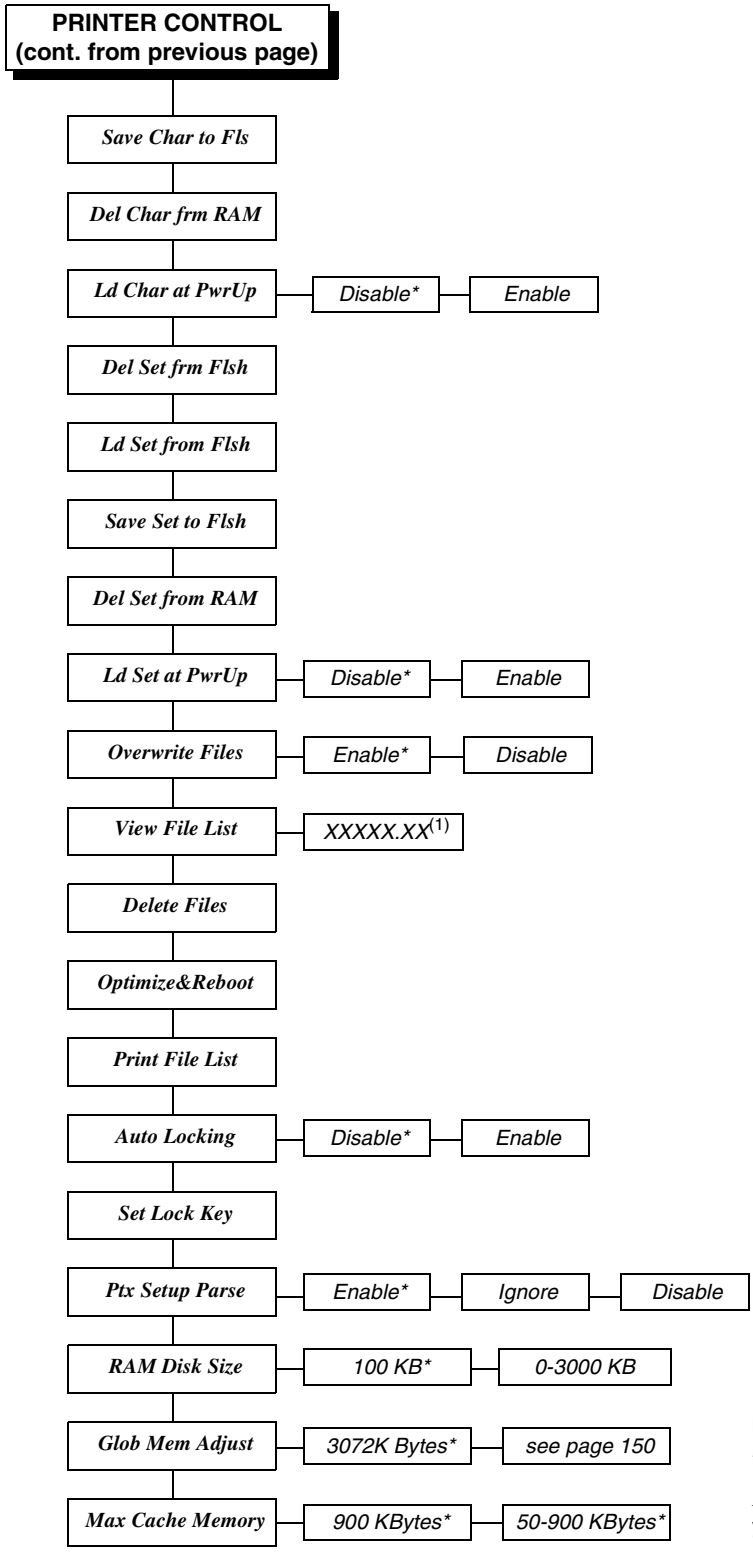
[1] Appears only if the CT emulation is installed.

[2] Will not appear if Ethernet is installed.

[3] Appears only if Ethernet is installed.

[4] When Coax/Twinax interface is installed, the factory default is Enable.

[5] Appears only if PPI1 is installed.



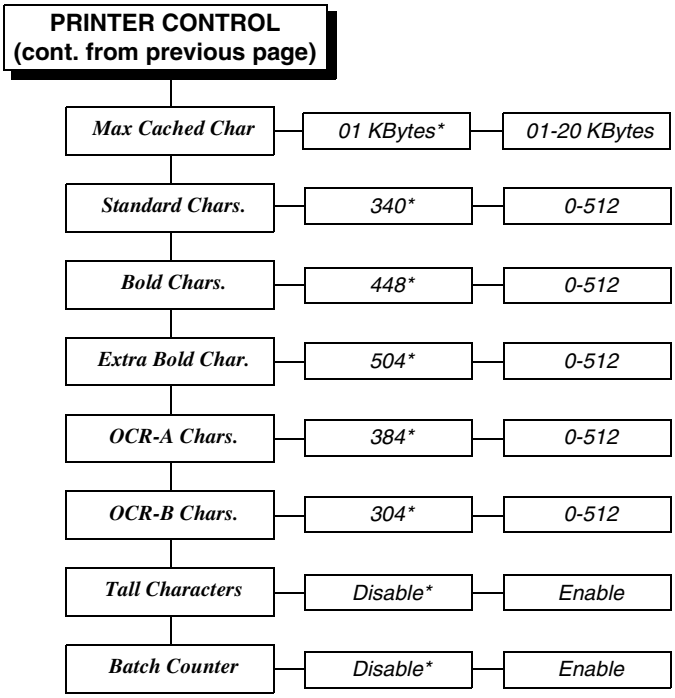
Continued at the top of next page

Notes:

* = Factory Default

Italicized items are available only when you enable Admin User (in the PRINTER CONTROL menu).

[1] You cannot change this value; it is a display only item.



Notes:

* = Factory Default

Italicized items are available only when you enable Admin User (in the PRINTER CONTROL menu).

PRINTER CONTROL Submenus

LP+ Emulation

This item selects the line or dot matrix printer to be emulated by the printer.

- **P-Series** (see page 184)
- **P-Series XQ** (see page 187)
- **Serial Matrix** (see page 189)
- **Proprinter XL** (see page 191)
- **Epson FX** (see page 193)

The factory default is P-Series.

CTHI Emulation

This item appears only when the CTHI option is installed.

CTHI Emulation selects the operation of the CTHI option as either a standard or simple protocol converter.

- **Standard**

  With a standard coax interface, the printer emulates the following IBM coax printer models:

  - 3287 Models 1 and 2
  - 4234 Model 1

  With a standard twinax interface, the printer emulates the following IBM twinax printer models:

  - 4234 Model 2
  - 5225 Models 1, 2, 3, and 4

  The standard Coax/Twinax emulation selection will only be available if Coax or Twinax is selected from the HOST INTERFACE menu.

NOTE: For more information, consult the *Coax/Twinax Programmer's Reference Manual*.

- **Simp Prot Conv (Simple Protocol Converter)**

  The Simple Protocol Converter (SPC) option allows those who use add-on coax or twinax protocol converters to produce the same output on a Printronix thermal printer with the Coax/Twinax (CTHI) capability as done using a non-CT printer with the third party converter interfaces. The SPC gives the printer the operational ability to connect to any PC or network system supporting parallel or serial interfaces, and to three different IBM host systems.

  - System 3x
  - AS/400*
  - 327x Control Units

The SPC will support the same models for Twinax as the Printronix P5000 printer.

The printer emulations supported by the SPC are Twinax 5225 and Coax 3287. The SPC also provides a range of interfaces available in your thermal printer: Centronics, serial, coax, and twinax. Also supported are Epson, Proprinter XL, P-Series, Serial Matrix, VGL, and PGL emulations.

The SPC has the ability to handle multiple print jobs concurrently through coax/twinax and parallel and serial interfaces. This is accomplished through the Auto Switching feature (see “Auto Switching” on page 299). Because of hardware restrictions, coax and twinax cannot be selected together.

For more information, refer to the *Coax/Twinax Programmer’s Reference Manual* for the Simple Protocol Converter Option.

The factory default is Standard.

Host Interface

This option allows you to send print jobs through any interface with auto-switching selected as host interface. It also allows a particular interface from the menu to be selected.

The options are Auto Switching, Centronics, Serial, IEEE 1284, Twinax, Coax, and Ethernet.

NOTE: The Twinax and Coax options appear only if the CT emulation is installed. The Ethernet option appears only if Ethernet is installed. The Centronics and IEEE 1284 options do not appear if Ethernet is installed.

The factory default is Auto Switching.

Active IGP Emul

This function allows you to activate the PGL or VGL emulation. There are two methods for selecting the desired emulation: directly from the printer menu or by sending a host command which will switch the emulation automatically (see the appropriate *Programmer’s Reference Manual* for details).

When changing from one IGP emulation to the other, the printer will load the saved configuration. Thus, any setting performed before selecting those interfaces and not saved in NVRAM will be lost.

IMPORTANT **When the ACTIVE IGP EMUL is switched from one IGP emulation to another, the printer will load the settings saved under the Power-Up Config. menu. These settings may not be the current settings in use prior to switching the Active IGP emulation. The Print Mode, Media Sensor, Media Handling, Calibration, Label Length, Label Width, and other settings in use will change to the settings saved under the Power-Up Config. menu. Therefore, insure that all desired settings are saved as the printer Power-Up Config. menu settings *before* you switch the Active IGP emulation.**

The options are IGP/PGL (the factory default) and IGP/VGL.

Power Saver Time

The time interval you specify for this parameter sets the amount of idle time before the printer goes into Power Saver mode.

Pressing any key removes the power saver message from the control panel. Sending a print job to the printer also turns off power saver mode.

The options are 1, 5, 10, 15, 30, 45, 60, and 240 minutes.

The factory default is 15 minutes.

Pwr Save Control

Pwr Save Control allows you to enable and disable Power Saver mode. If enabled, the menu for Power Saver Time is in effect.

The options are Enable (the factory default) and Disable.

Display Language

This parameter chooses the language that will appear on the LCD: English, German, French, Italian, Spanish, or Portuguese.

The factory default is English.

Del Char frm Fls

This option deletes downloaded character(s) from flash memory.

Ld Char from Fls

This option loads downloaded character(s) from flash memory.

Save Char to Fls

This option saves downloaded character(s) to flash memory.

Del Char frm RAM

This option deletes downloaded character(s) from RAM.

Ld Char at PwrUp

This option loads downloaded character(s) from flash memory at Power Up.

The options are Disable (the factory default) and Enable.

Del Set frm Flsh

This option deletes downloaded overlay set(s) from flash memory.

Ld Set from Flsh

This option loads downloaded overlay set(s) from flash memory.

Save Set to Flsh

This option saves downloaded overlay set(s) to flash memory.

Del Set from RAM

This option deletes the downloaded overlay set(s) from RAM.

Ld Set at PwrUp

This option loads the downloaded overlay set from flash memory at Power Up.

The options are Disable (the factory default) and Enable.

Alarm

- **On**. An audible alarm sounds (3 beeps) when a fault occurs, such as a paper jam.
- **Cont. Beep**. A continuous audible alarm sounds when a fault occurs, which can be stopped by pressing CLEAR.
- **Off**. No audible alarm sounds.

The factory default is On.

Power-up State

- **Online**. The printer powers up in the online state.
- **Offline**. The printer powers up in the offline state. This selection must be saved as a power-up configuration to be used.

The factory default is Online.

Ptx Setup SFCC

Allows you to choose the hex value of the ASCII character you wish to use as the SFCC for the PTX SETUP command. Valid hex values are 01-FF.

The factory default value is hex 21, which corresponds to the “!” character.

Overwrite Files

This allows you to prevent files from being overwritten by disabling the overwrite function.

The options are Enable (the factory default) and Disable.

View File List

Displays the list of files in the file system. Pressing ↓ displays the file size.

Delete Files

Allows you to delete files in the file list. Contact your administrator for assistance.

Optimize&Reboot

Reclaims flash space from deleted flash files. After pressing ↵ wait for the printer to reboot.

Print File List

Prints a summary of the files stored in flash memory and several statistics on File System usage.

Cancel Key

- **Disable**.
- **Enable**. When enabled, the ✘ key may be used in offline mode to clear all data in the print buffer, and deleted data will not be printed.

The factory default is Disable. When the Coax/Twinax interface is installed, the factory default is Enable.

Compatibility

This parameter allows you to make T5000 series thermal printers compatible with other printers.

When trying to preserve compatibility with respect to barcodes, you may not always be able to make them equal in size. This is due to the various dot-per-inch differences between printer types. When an exact match cannot be made, the barcode is reduced in size so that the form bounds will not be compromised and the barcode will be readable.

- **Default**. Use for optimum performance.
- **Laser**. Forces the output to correspond with the laser line of printers.
- **P5000**. Forces the output to correspond with the P5000 line of line matrix printers.
- **T3000**. Forces the output to correspond with the T3000 line of thermal printers.
- **T1006**. Forces the output to correspond with the T1006 line of thermal printers.

The factory default is Default.

Set Sharing

This option allows character sets to be shared between the active LP+ protocol and the active emulation. If CT is installed and active, choosing a character set in the CT activates that character set in the active emulation and LP+ protocols. (These changes are not visible on the front panel.) If Set Sharing is not selected, only the LP+ protocol will share the CT's character set.

Switching host interfaces from CT to Centronics when Set Sharing is enabled causes the LP+ protocol character set to change to the same character set as the active emulation, if possible.

In a non-CT system, changing character sets in the LP+ protocol causes the active emulation to change to the same character set if the selected set exists in the active emulation. If the active emulation has no access to the selected set, no changes are made. Selecting a new character set in the active emulation causes the LP+ protocol to change to the same character set if the selected character set exists in the active LP+ protocol. Not all sets are shared between emulations in the Standard group of character sets. As a result, selecting a set in the Standard group of the LP+ protocol or active emulation may or may not cause the other emulation to have the same set.

NOTE: The front panel option, Set Sharing, has no effect on the LP+ and CT/LP+ builds. The option only applies to the builds with PPI1.

The options are Disable (the factory default) and Enable.

Admin User

- **Disable**.
- **Enable**. When enabled, this function permits access to submenu items which would not normally be changed by a typical user.

The factory default is Disable.

Auto Locking

- **Disable**. The ↵ (ENTER) key must be locked manually.
- **Enable**. The printer automatically locks the ↵ key five minutes after the last control panel key press.

The factory default is Disable.

Set Lock Key

Normally, to lock or unlock the printer menu, the ↓ and ↵ keys are pressed at the same time. The Set Lock Key parameter lets you choose different keys to lock or unlock the printer menu. You may choose almost any group of keys as the new lock and unlock keys. You cannot use the ↵ key or any key combinations which are already used for another function. There is no limit to how many keys can be selected.

To set the new lock key:

1. Go to the PRINTER CONTROL main menu and select "Set Lock Key."

2. Press ↵. The display reads, “Select a new lock key.”
3. Press the combination of keys that you want to be the new lock key. Make sure you press all keys selected at the same time.
4. If the selection is valid, the display will read, “Enter the new lock key again.” Press the same combination of keys a second time. If the selection is invalid, the display will read, “Invalid key selection.” Return to step 2 and start over.
5. If the new lock key combination is entered again correctly, the display will read, “Lock key has been changed.” If it was entered incorrectly, the display will read, “Validation failed.” Start over at step 1.
6. After entering the new lock combination successfully, press the PAUSE key to put the printer back online.

NOTE: The new lock combination will remain even if the printer is powered off and back on.

Ptx Setup Parse

- **Enable**. Will parse and execute the PTX SETUP commands.
- **Ignore**. Will parse the PTX SETUP commands but not act on them.
- **Disable**. Will not parse the PTX SETUP commands so they will print out as text.

The factory default is Enable.

RAM Disk Size

Use this option to increase or decrease the amount of space available to store files on the RAM disk.

The range is 0-3000 KB, and the factory default is 100 KB.

Glob Mem Adjust

This menu allows you to adjust the ratio of global memory allocated to label size versus PGL forms, fonts, and logos. For example, when using short labels, you can allocate more memory to forms, fonts, and logos by increasing the Glob Mem Adjust value. The default settings and adjustment ranges depend upon the amount of installed printer DRAM and are listed below.

NOTE: You can find the amount of installed DRAM in two ways: listed at the top of your configuration printout next to “DRAM” or from the control panel via the DIAGNOSTIC menu next to the DRAM Installed option.

DRAM Installed	8 MB	16 MB
Factory Default	0.5 MB	3 MB
Range	0 to 1 MB	0 to 9 MB

Max Cache Memory

The Maximum Cache Memory option specifies the size of the memory block that can be allocated to the font cache. The font cache stores bitmaps that are created on demand from the font outlines stored on the printer flash. The cache allows the printer to print scalable fonts at optimum speed.

To calculate the memory requirement, use this equation:

$$\frac{\text{horizontal resolution x} \quad \text{vertical resolution x} \quad \text{average character height (inches) x} \quad \text{average character width (inches) x} \quad \text{\# of characters to be cached}}{8}$$

The allowable range is 50 KBytes through 900 KBytes in 50-KByte increments.

The factory default is 900 KB.

NOTE: For most applications, the default settings for font memory are acceptable. Therefore, do not change the defaults unless your application requires an uncommon memory configuration.

Max Cached Char

The Maximum Cached Characters option specifies the size of the largest character that can be stored in the font cache. To calculate the memory requirement, use this equation:

$$\frac{\text{horizontal resolution x} \quad \text{vertical resolution x} \quad \text{average character height (inches) x} \quad \text{character width (inches)}}{8}$$

For example, with a print head that prints at 203 dpi you would use the following formula:

$$\frac{203 \text{ X } 203 \text{ X } 1 \text{ X } 1}{8} = 5{,}151$$

Therefore, select a value that is equal to or greater than 5,151. The closest available value is 6 KBytes.

The allowable range is 1 KByte through 20 KBytes, in 1-KByte increments.

The factory default is 01 KBytes.

NOTE: For most applications, the default settings for font memory are acceptable. Therefore, do not change the defaults unless your application requires an uncommon memory configuration.

Standard Chars.

This menu entry permits you to adjust the thickness or font weight of standard text fonts.

The range is 0-512, and the factory default is 340.

Bold Chars.

This menu entry permits you to adjust the thickness or font weight of bold text fonts. This menu will not take effect unless you save it in a configuration and the printer is powered up with that configuration.

The range is 0-512, and the factory default is 448.

Extra Bold Char.

This menu entry permits you to adjust the thickness or font weight of extra bold text fonts.

The range is 0-512, and the factory default is 504.

NOTE: For most applications, the default settings for font memory are acceptable. Therefore, do not change the defaults unless your application requires an uncommon memory configuration.

OCR-A Chars.

Character weight adjustment of resident OCR-A characters.

The range is 0-512, and the factory default is 384.

OCR-B Chars.

Character weight adjustment of resident OCR-B characters.

The range is 0-512, and the factory default is 304.

Tall Characters

Increases the point height of resident Intellifont characters.

- **Enable**. Increases the point height of resident Intellifont characters approximately 10%.
- **Disable**. Standard resident font character point height is maintained.

The factory default is Disable.

Batch Counter

Displays the number of pages remaining in a print job.

- **Enable**. The # Pages remaining to be printed will display on the second line of the control panel LCD. This feature is supported in PGL and PPI1 only. The PGL Execute command to support this feature is: ~EXECUTE;NAME;(#Pages). The PPI1 Execute command is: ^PQ(#Pages).

NOTE: If the correct execute command is absent from the print file, “0 Pages” will continually display on the control panel LCD.

- **Disable**. The # Pages remaining to be printed will not display. Instead, the Active emulation and interface will display on the second line of the control panel LCD.

The factory default is Disable.

EMULATIONS

Overview

This section covers the following emulations:

- Coax (page 158)
- Twinax (page 161)
- SPC Coax (page 164)
- SPC Twinax (page 165)
- IPDS (page 166)
- TN3270 (page 170)
- TN5250 (page 173)
- IGP/PGL (page 175)
- IGP/VGL (page 178)
- IGP/PPI1 (page 181)
- IGP/PPI2 (page 183)
- P-Series (page 184)
- P-Series XQ (page 187)
- Serial Matrix (page 189)
- Proprinter XL (page 191)
- Epson FX (page 193)

You can select emulation default parameters directly from the control panel, or by control codes as explained in the appropriate Programmer's Reference Manual.

IMPORTANT **BEFORE you reconfigure an emulation, print a configuration sheet to see all current settings.**

Standard C/T Interface

With a standard coax interface, the printer emulates the following IBM coax printer models:

- 3287 Models 1 and 2
- 4234 Models 1

With a standard twinax interface, the printer emulates the following IBM twinax printer models:

- 4234 Model 2
- 5225 Models 1, 2, 3, and 4

NOTE: The standard Coax/Twinax emulation selection will only be available if coax or twinax is selected from the C/T PORT menu.

For more information, refer to the *Coax/Twinax Programmer's Reference Manual*.

Simple Protocol Converter

The Simple Protocol Converter (SPC) option allows those who use third party add-on coax or twinax protocol converters to produce the same output on a Printronix thermal printer with the Coax/Twinax (CTHI) capability as done using a non-CT printer with the third party converter interfaces.

The SPC gives the printer the operational ability to connect to any PC or network system supporting parallel or serial interfaces and to three different IBM host systems:

- System 3x
- AS/400
- 327X Control Units

The SPC will support the following third party models for Twinax: MODE 219, MODE IBM, and MODE P5000.

The printer emulations supported by the SPC are Twinax 5225 and Coax 3287. The SPC also provides a range of interfaces available in your thermal printer: Centronics, Serial, Coax, and Twinax. Also supported are Epson, Proprinter XL, P-Series, Serial Matrix, VGL, and PGL emulations.

The SPC has the ability to handle multiple print jobs concurrently through coax/twinax and parallel and serial interfaces. This is accomplished through the Auto Switching feature. Because of hardware restrictions, coax and twinax cannot be selected together.

PGL

The PGL emulation is the software based Printronix Graphics Language (PGL) for the Printronix thermal printer family. It is based upon, and compatible with, the IGP-100/200/400 board. It includes the following features:

On-Line Form and Label Generation makes it easy to create forms or labels with a “preprinted” look for each application. PGL programs control all graphic functions, dramatically reducing host computer programming and processing time.

Graphic capabilities include boxes, vertical and horizontal lines with user-selectable thickness, logos, and special alphanumeric print features. Forms and graphic designs can be duplicated horizontally and vertically.

Alphanumeric data can appear as prepositioned “fixed” information (entered when the form is created), be overlayed onto the form (positioned in a specific location after the form is created), or may be dynamically merged with the form.

Selectable Bar Codes provide you with the appropriate bar code for your application using standard wide-to-narrow ratios. A wide selection of bar codes are available: Code 39, Interleaved 2 of 5, UPC-A, UPC-E, MSI A through D, Code 128 Subset A, B, and C, EAN/UCC-128, EAN 8, EAN 13, POSTNET, PostBar, Royal Mail, and PDF417. UPC and EAN bar codes can specify add-on data.

Expanded and Compressed Character Print attract attention where needed. Alphanumeric height and width are controlled independently for a wide range of character sizes up to 113 times the standard character size (up to 11.3 inches wide and tall). Compressed print sizes of 12, 13, 15, and 17 characters per inch (cpi) are available.

Logos are created using alphanumeric commands and add many print and shading features for a “customized” appearance to forms, reports, and labels.

Rotated Alphanumerics permit new concepts in form design. Normal, expanded, and compressed character strings can be rotated 90 degrees clockwise or counterclockwise, or they can be printed upside down.

Reversed Print permits highlighting and contrasting by printing white characters on a dark background.

Automatic Increment/Decrement Capability allows batch form processing. You can identify individual numeric and bar code data fields, which includes automatic increment or decrement functions.

Scaling Capability permits graphic elements, such as corners or boxes, to retain their physical shapes and sizes when printed in a horizontal and vertical density other than the base density of 60 x 72 dpi.

Multinational Character Sets provide 32 international character sets, each 96 characters in length. This feature also allows you to create your own character sets using characters defined and stored in memory.

Extended Character Sets provide 33 extended character sets, also containing 96 characters in length. These are also stored in memory.

VGL

The VGL Graphics language is a software emulation designed for the thermal printer. The VGL emulation of the QMS Code V Version II programming language produces on-line forms, bar codes, and alphanumeric text generation. It includes the following features:

On-Line Form and Label Generation makes it easy to create forms or labels with the “preprinted” look for each application. VGL programs control all graphics functions, dramatically reducing host computer programming and processing time. Graphics capabilities include boxes, vertical and horizontal, solid and dashed lines with a variety of thickness, logos, and special alphanumeric print features.

Variable Bar Codes allow the bar code for your application to print with standard or user-defined ratios in vertical or horizontal orientations. Available bar codes are: Codabar, Code 39, Code 93, Code 128 with Subsets A, B, and C, and Code EAN/UCC 128, EAN 8, EAN 13, Interleaved 2 of 5, MSI, UPC-A, UPC-E, POSTNET, PostBar, Royal Mail, and UPC Shipping. POSTNET is available only in the horizontal direction. A dark print mode is included for darker, high-contrast bar codes. The IBARC bar code command prints bar codes in four orientations: horizontal, rotated 90, rotated 180, or rotated 270 degrees.

Expanded and Compressed Print draws attention where needed. Alphanumeric height and width are controlled independently for a tremendous range of character sizes up to 9.9 inches wide and tall. Several compressed print sizes are available: 12, 13.33, 15, 17.65, and 20 cpi (characters per inch), permitting up to 170 columns in an 8.5 inch printed area (20 cpi).

Rotated Alphanumerics permit new concepts in form design. Normal, expanded, and compressed character strings can be rotated 90 degrees clockwise, counterclockwise, or printed upside down.

Logos are easily created using alphanumeric commands and a variety of print and shading features, providing a “customized” appearance for forms, reports, and labels. The registered trademark, copyright, TUV, GS-Mark, UL, and CSA symbols are provided as standard designs on the VGL, and you can also define custom symbols.

Reverse and Shaded Print permit highlighting and contrasting by printing white characters on a dark background or white characters on a gray, shaded background. Various levels or patterns of gray shading and reverse printing may combine with the many other print features to create distinctive designs.

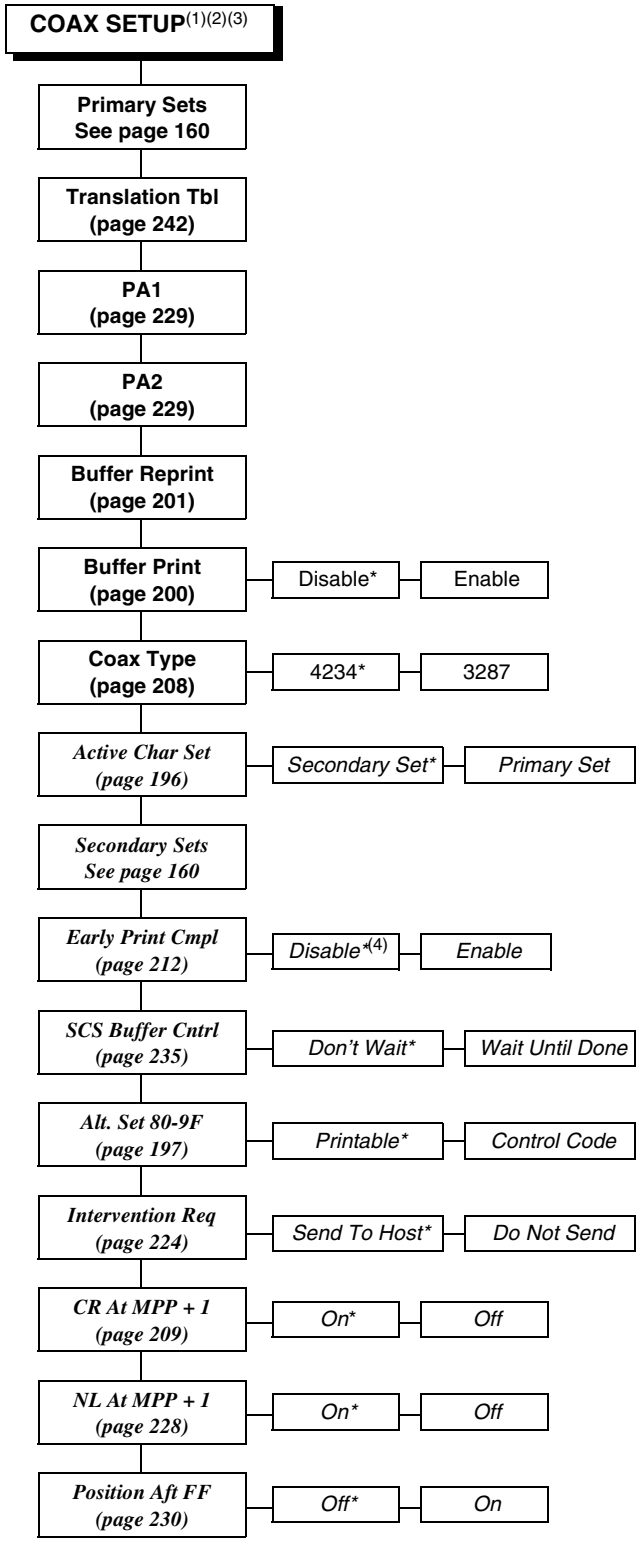
Automatic Increment/Decrement Capability allows batch form processing. Individual alphabetic, numeric, and bar code data fields can be identified and automatically incremented or decremented by any amount, beginning from a specified reference point.

Standard Character Sets provide you with many different character sets. Based on the Multinational Character Set, you may create your own character sets using characters defined and stored in flash memory.

P-Series, P-Ser XQ, Ser Matrix, Proprinter, and Epson FX

These menus are available only when you enable Admin User (under the PRINTER CONTROL menu).

COAX SETUP



Continued at the top of next page

Notes:

* = Factory Default

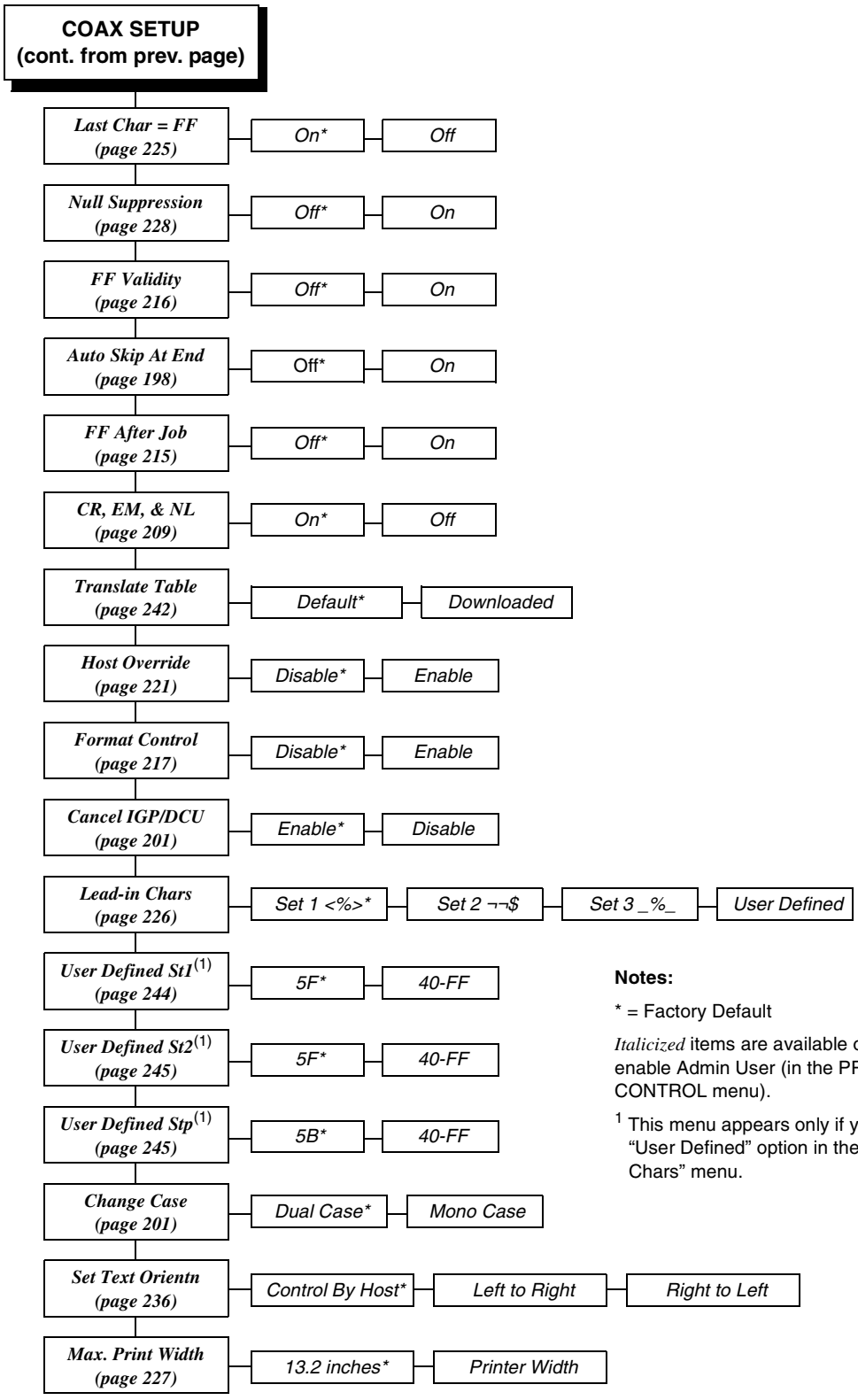
Italicized items are available only when you enable Admin User (in the PRINTER CONTROL menu).

[1] This menu appears only if the CTHI option is installed.

[2] This menu appears only if Port Type (under C/T PORT) is set to Coax.

[3] This menu appears only if the CTHI emulation (under PRINTER CONTROL) is set to Standard.

[4] When in SPC Mode, the default is Enable.



Notes:

* = Factory Default

Italicized items are available only when you enable Admin User (in the PRINTER CONTROL menu).

[1] This menu appears only if you select the "User Defined" option in the "Lead-in Chars" menu.

Coax Setup - Primary Sets and Secondary Sets

COAX SETUP

Primary Sets (from page 158)

0037 English US*
0037 Eng Nether
0285 English UK
0273 Austr/Germ
0274 Belg. Old
0275 Brazilian
0260 Canad Fren
0277 Danish
0287 Danish Alt
0278 Finnish
0288 Finn. Alt
0297 French
0500 Internat 5
0280 Italian
0281 Japan. Eng
0282 Portuguese
0284 Span Speak
0289 Span. Alt
0500 Swiss Bil
0500 Belg. New
0803 Hebrew Old
0424 Hebrew
0892 OCR A
0893 OCR B
0420 Arabic
0880 Cyril. Old
0423 Greek Old
875 Gr New Euro
0871 Icelandic
0290 Japan Kata
0870 Latin 2
0838 Thai
1026 Turkish
0890 Yugos. Old
1097 Farsi
1025 Cyrillic
0905 Turk. Old
0256 Intern. 1
0924 Euro Lat-9
1140 Euro Eng.
1141 Euro Aust.
1142 Euro Dan.
1143 Euro Finn.
1144 Euro Ital.
1145 Euro Span.
1146 Euro UK
1147 Euro Fren.
1148 Euro Swiss
1149 Euro Ice.

Secondary Sets (from page 158)

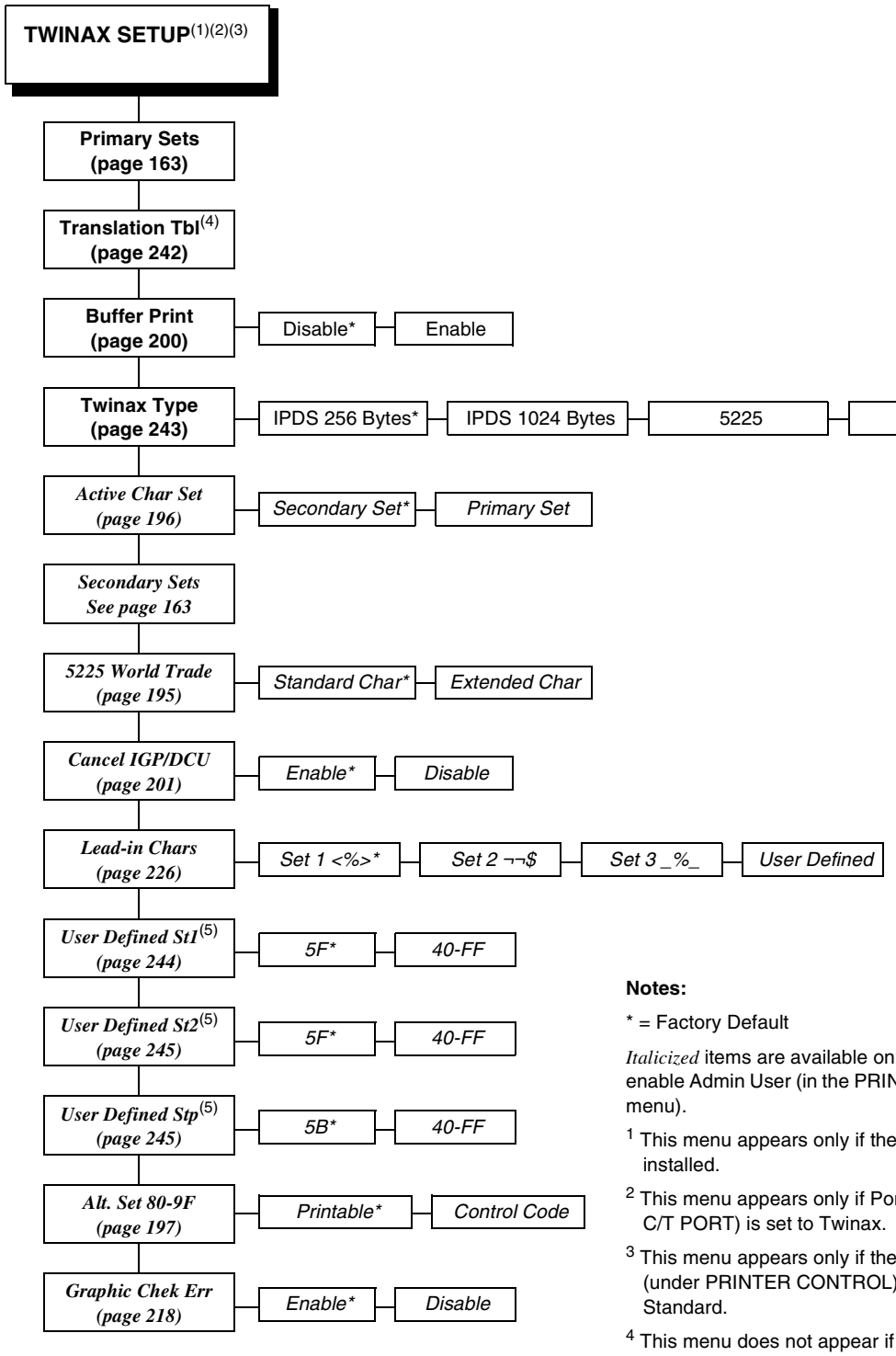
English US*
English UK
Austrian/German
German (Alt)
Belgian
Brazilian
Canadian French
Danish/Norweg.
Danish (Alt)
Finnish/Swedish
Finnish (Alt)
French
International
Italian
Japanese Eng.
Japanese Katak.
Portuguese
Portug. (Alt)
Spanish
Spanish (Alt)
Spanish Speak.
Swiss Fren/Ger
Old Hebrew
Hebrew
Farsi/Latin
Greek Old
Greek New
Arabic
Turkish
Turkish Old
Latin 2/ROECE
Yugoslavian

Notes:

* = Factory Default

Although these options are listed vertically here, use your plus (+) and minus (-) keys to cycle through the options when you are operating your printer.

TWINAX SETUP



Notes:

* = Factory Default

Italicized items are available only when you enable Admin User (in the PRINTER CONTROL menu).

[1] This menu appears only if the CTHI option is installed.

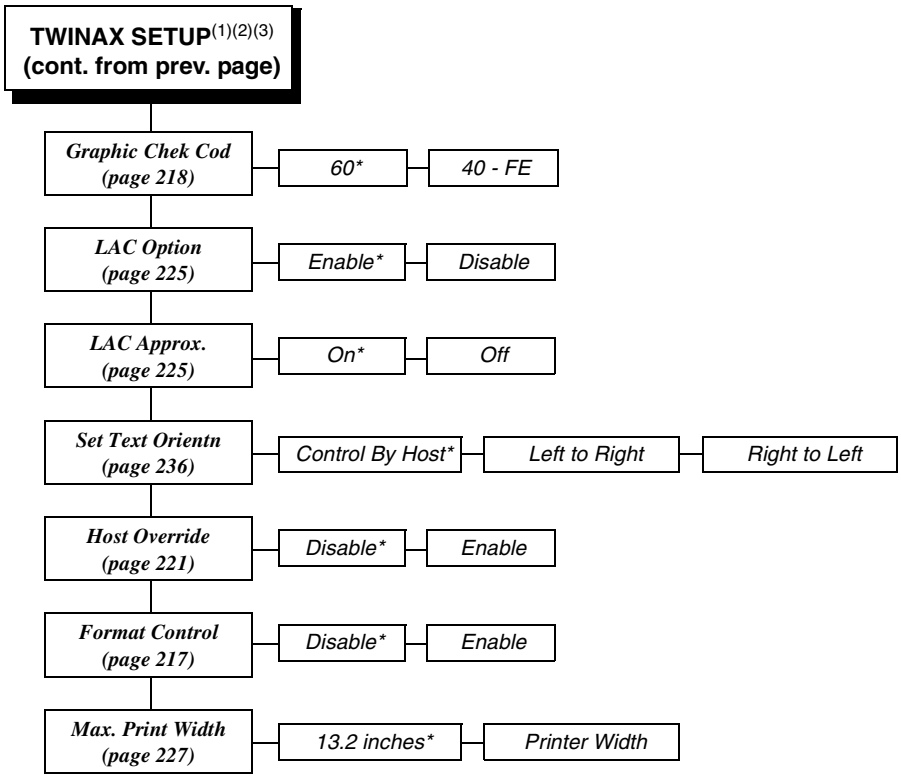
[2] This menu appears only if Port Type (under C/T PORT) is set to Twinax.

[3] This menu appears only if the CTHI emulation (under PRINTER CONTROL) is set to Standard.

[4] This menu does not appear if the IPDS emulation is installed.

[5] This menu appears only if you select the "User Defined" option in the "Lead-in Chars" menu.

Continued at the top of next page



Notes:

* = Factory Default

Italicized items are available only when you enable Admin User (in the PRINTER CONTROL menu).

[1] This menu appears only if the CTHI option is installed.

[2] This menu appears only if Port Type (under C/T PORT) is set to Twinax.

[3] This menu appears only if the CTHI emulation (under PRINTER CONTROL) is set to Standard.

Twinax Setup - Primary Sets and Secondary Sets

TWINAX SETUP

Primary Sets (from page 161)

0037 English US*
0037 Eng Nether
0500 Swiss Bil
0500 Belg. New
0273 Austr/Germ
0274 Belg. Old
0275 Brazilian
0260 Canad Fren
0277 Danish
0278 Finnish
0297 French
0280 Italian
0281 Japan. Eng
0282 Portuguese
0284 Span Speak
0285 English UK
0892 OCR A
0893 OCR B
0424 Hebrew
0803 Hebrew Old
0420 Arabic
0880 Cyril. Old
0423 Greek Old
875 Gr New Euro
0871 Icelandic
0290 Japan Kata
0870 Latin 2
0838 Thai
1026 Turkish
0890 Yugos. Old
1097 Farsi
1025 Cyrillic
0256 Intern. 1
1112 Balt Mult
0924 Euro Lat-9
1122 Estonian
1140 Euro Eng.
1141 Euro Aust.
1142 Euro Dan.
1143 Euro Finn.
1144 Euro Ital.
1145 Euro Span.
1146 Euro UK
1147 Euro Fren.
1148 Euro Swiss
1149 Euro Ice.
0500 Internat 5

Secondary Sets (from page 161)

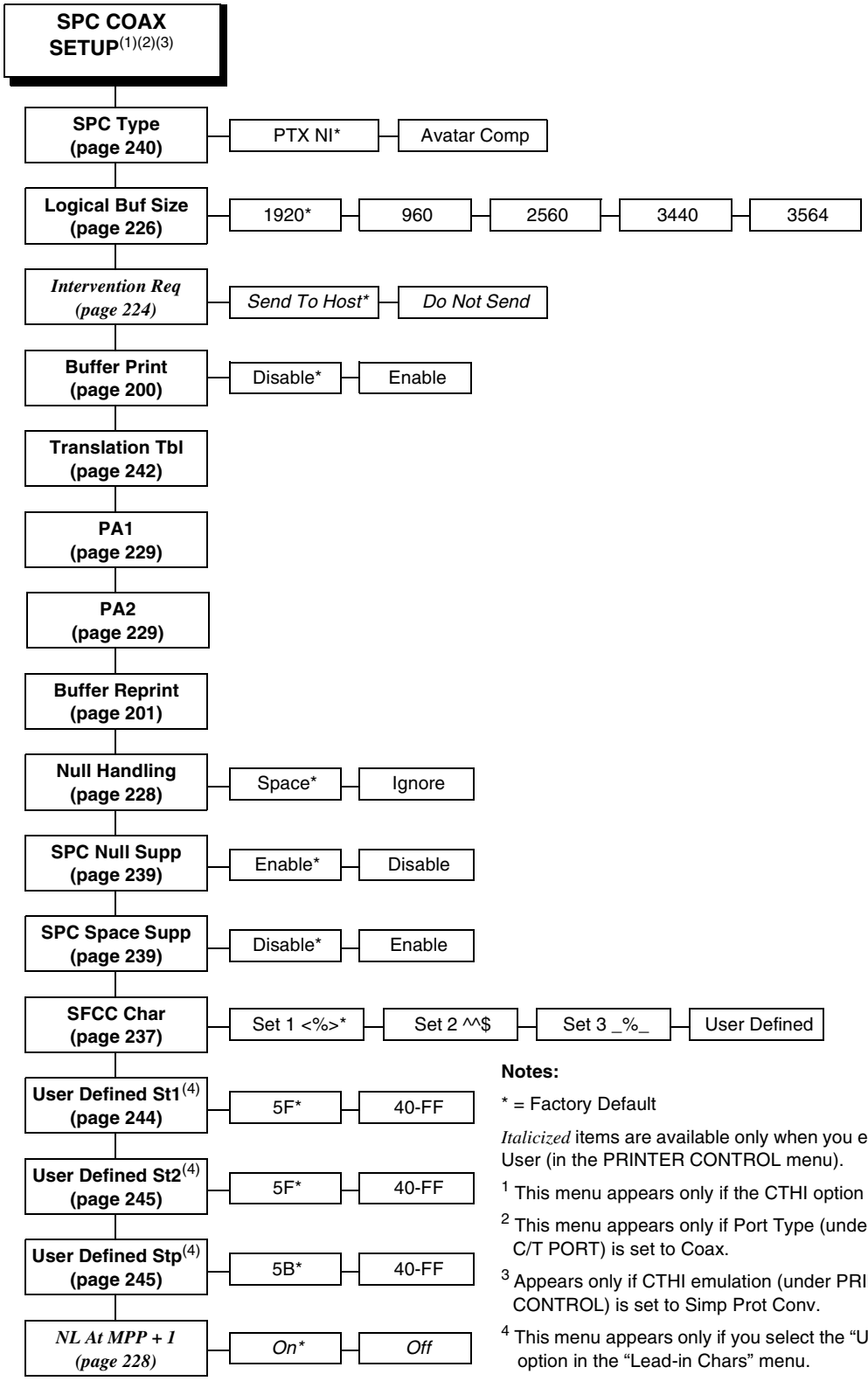
English US*
Austrian/German
Belgian
Brazilian
Canadian French
Danish/Norweg.
Finnish/Swedish
French
Italian
Japanese Eng.
Japanese Katak.
Portuguese
Spanish
Spanish Speak.
English UK
Old Hebrew
Hebrew
Farsi/Latin
Greek Old
Greek New
Arabic
Turkish
Latin 2/ROECE
Yugoslavian
Multinational

Notes:

* = Factory Default

Although these options are listed vertically here, use your plus (+) and minus (-) keys to cycle through the options when you are operating your printer.

SPC COAX SETUP



Notes:

* = Factory Default

Italicized items are available only when you enable Admin User (in the PRINTER CONTROL menu).

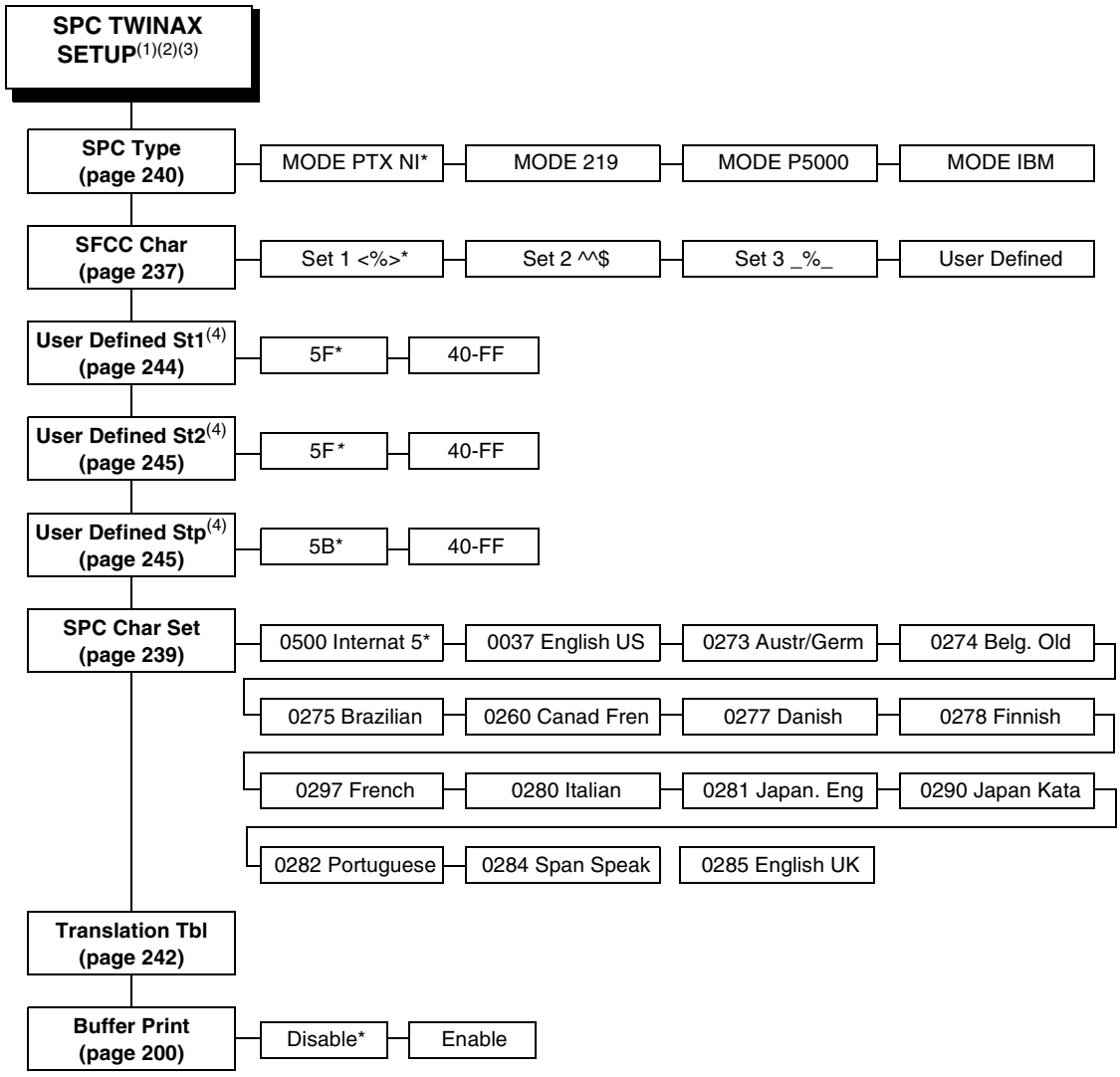
[1] This menu appears only if the CTHI option is installed.

[2] This menu appears only if Port Type (under C/T PORT) is set to Coax.

[3] Appears only if CTHI emulation (under PRINTER CONTROL) is set to Simp Prot Conv.

[4] This menu appears only if you select the “User Defined” option in the “Lead-in Chars” menu.

SPC TWINAX SETUP



Notes:

* = Factory Default

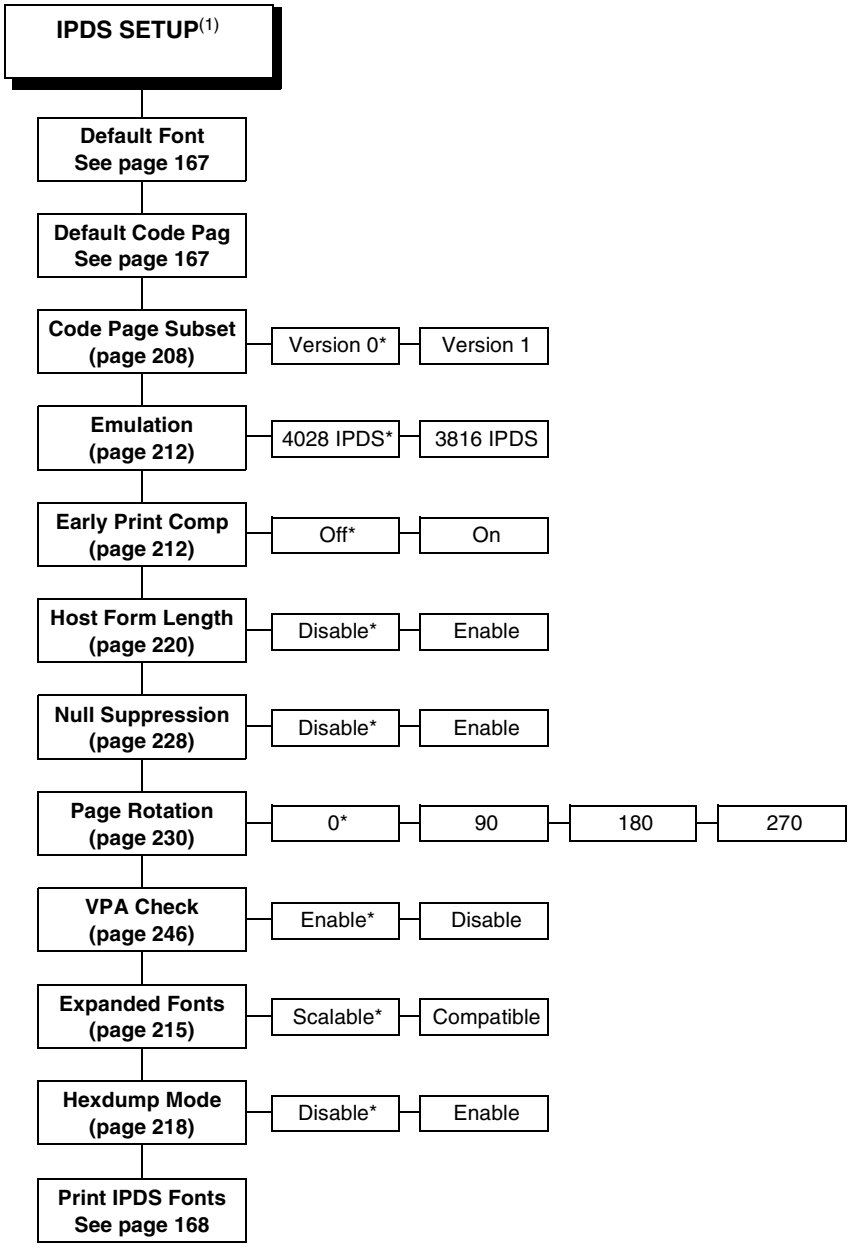
[1] This menu appears only if the CTHI option is installed.

[2] This menu appears only if Port Type (under C/T PORT) is set to Twinax.

[3] Appears only if CTHI emulation (under PRINTER CONTROL) is set to Simp Prot Conv.

[4] This menu appears only if you select the “User Defined” option in the “Lead-in Chars” menu.

IPDS SETUP



Notes:

* = Factory Default

[1] This menu appears only if the IPDS emulation is installed.

IPDS Setup - Default Font and Default Code Pag

IPDS SETUP

Default Font[1] (from page 166)

Courier 10*
Prestige 10
Courier it 10
OCRA
APL 12
Courier 12
Prestige 12
Courier it 12
Prestige it 12
Boldface PSM
Courier 15
Courier 17.1
Gothic 20
Times Roman 6
Times Roman 8
Times Roman 10
Times Roman 12
Times Roman B10
Times Roman B12
Times Roman B14
Times Roman B18
Times Roman B24
Times Roman I10
Times Roman I12
Times RomanBI10
Times RomanBI12
OCRB

Default Code Pag[2] (from page 166)

English/USA/Can*
English/US/Intl
Internat. Set 1
Symbols Set 7
Canadian/French
Austrian/German
Belgian Old
Brazilian
Canada (French)
Danish/Norw.
Finnish/Swedish
Italian
Japanese Eng.
Portuguese
Spanish Speak.
English (UK)
Aust/Germ. (ALT)
Dan/Norw. (ALT)
Fin/Swed. (ALT)
Spanish (ALT)
Katakana
French Azerty
Graphic Escape
Int. Typographic
Arabic
Greek
Hebrew
PC
Internat. Set 5
Hebrew ALT
PC-Multilingual
Latin 2/ROECE
Icelandic
Cyrillic Old
OCR A
OCR B
DCF
US Text Subset
Turkish Latin 5
Euro US/Can.
Euro Aust/Germ.
Euro Dan/Norw.
Euro Fin/Swed.
Euro Italian
Euro Spanish
Euro UK/Ireland
Euro French
Euro Internat.
Euro Icelandic

Notes:

* = Factory Default

Although these options are listed vertically here, use your plus (+) and minus (-) keys to cycle through the options when you are operating your printer.

[1] Refer to page 210 for a more detailed description of this submenu.

[2] Refer to page 210 for a more detailed description of this submenu.

IPDS Setup - Print IPDS Fonts

This feature allows you to print a list of all resident fonts currently available in the active IPDS emulation (4028 or 3816).

T5308
Resident IPDS Fonts
4028 Emulation

FONT STYLE	FGID Hex	FGID Deci	FONT WIDTH	CPI	PT SIZE	PRINTSAMPLE
OCR B	0003	3	144	10		ABCDEFGHIJabcdefghij0123456789
Courier	000b	11	144	10		ABCDEFGHIJabcdefghij0123456789
Prestige Pica	000c	12	144	10		ABCDEFGHIJabcdefghij0123456789
Courier Italic	0012	18	144	10		*ABCDEFGHIJabcdefghij0123456789*
OCR A	0013	19	144	10		ABCDEFGHIJabcdefghij0123456789
Courier Bold	002e	46	144	10		ABCDEFGHIJabcdefghij0123456789
APL	004c	76	120	12		*ABCDEFGHI*Jabcdefghij0123456789
Courier	0055	85	120	12		ABCDEFGHIJabcdefghij0123456789
Prestige Elite	0056	86	120	12		ABCDEFGHIJabcdefghij0123456789
Courier Italic	005c	92	120	12		*ABCDEFGHIJabcdefghij0123456789*
Prestige Elite Bold	006f	111	120	12		ABCDEFGHIJabcdefghij0123456789
Prestige Elite Italics	0070	112	120	12		*ABCDEFGHIJabcdefghij0123456789*
Document PSM	009f	159	120	PS		ABCDEFGHIJabcdefghij0123456789
Prestige PSM	00a4	164	120	PS		ABCDEFGHIJabcdefghij0123456789
Prestige elite	00dd	221	96	15		**ABCDEFGHIJabcdefghij0123456789**
Courier	00df	223	96	15		ABCDEFGHIJabcdefghij0123456789
Courier	00fe	254	84	17.1		ABCDEFGHIJabcdefghij0123456789
Prestige Elite	0100	256	84	17.1		ABCDEFGHIJabcdefghij0123456789
Gothic Text	0119	281	72	20		ABCDEFGHIJabcdefghij0123456789
Letter Gothic Bold	0194	404		SC		**ABCDEFGHIJabcdefghij0123456789**
Courier Bold	01a4	420		SC		**ABCDEFGHIJabcdefghij0123456789**
Times Roman	1637	5687	40	TYPO	6	ABCDEFGHIJabcdefghij0123456789
Times Roman	1637	5687	53	TYPO	8	ABCDEFGHIJabcdefghij0123456789
Times Roman	1637	5687	67	TYPO	10	ABCDEFGHIJabcdefghij0123456789
Times Roman	1637	5687	80	TYPO	12	ABCDEFGHIJabcdefghij0123456789
Times Roman Bold	164b	5707	67	TYPO	10	**ABCDEFGHIJabcdefghij0123456789**
Times Roman Bold	164b	5707	80	TYPO	12	**ABCDEFGHIJabcdefghij0123456789**
Times Roman Bold	164b	5707	93	TYPO	14	**ABCDEFGHIJabcdefghij0123456789**
Times Roman Bold	164b	5707	120	TYPO	18	**ABCDEFGHIJabcdefghij0123456789**
Times Roman Bold	164b	5707	160	TYPO	24	**ABCDEFGHIJabcdefghij0123456789**
Times Roman Italic	16b7	5815	67	TYPO	10	*ABCDEFGHIJabcdefghij0123456789*
Times Roman Italic	16b7	5815	80	TYPO	12	*ABCDEFGHIJabcdefghij0123456789*
Times Roman Bold Ital.	16cb	5835	67	TYPO	10	***ABCDEFGHIJabcdefghij0123456789***
Times Roman Bold Ital.	16cb	5835	80	TYPO	12	***ABCDEFGHIJabcdefghij0123456789***

32 Resident Bitmap Fonts
2 Scalable Fonts

TYPO = Typographic
PS = Proportionally Spaced
SC = Scalable

NOTE: The Scalable fonts are currently rendered at 12 points.
They are scalable to any integer point size.

Figure 4. IPDS Fonts - 4028 Emulation Sample Printout

IPDS Setup - Print IPDS Fonts (cont.)

T5308
Resident IPDS Fonts
3816 Emulation

FONT STYLE	FGID Hex	FGID Deci	FONT WIDTH	CPI	PT SIZE	PRINTSAMPLE
OCR B	0003	3	144	10		ABCDEFGHIJabcdefghij0123456789
Orator	0005	5	144	10		ABCDEFGHIJABCDEFGHIJ0123456789
Courier	000b	11	144	10		ABCDEFGHIJabcdefghij0123456789
Prestige Pica	000c	12	144	10		ABCDEFGHIJabcdefghij0123456789
Courier Italic	0012	18	144	10		*ABCDEFGHIJabcdefghij0123456789*
OCR A	0013	19	144	10		ABCDEFGHIJabcdefghij0123456789
Arabic Kateb	0021	33	144	10		ABCDEFGHIJabcdefghij0123456789
Gothic Text	0028	40	144	10		ABCDEFGHIJabcdefghij0123456789
Katakana Gothic	002c	44	144	10		ABCDEFGHIJabcdefghij0123456789
Gothic Text	0042	66	120	12		ABCDEFGHIJabcdefghij0123456789
Gothic Text Italic	0044	68	120	12		*ABCDEFGHIJabcdefghij0123456789*
Script	0054	84	120	12		*ABCDEFGHIJabcdefghij0123456789*
Courier	0055	85	120	12		ABCDEFGHIJabcdefghij0123456789
Prestige Elite	0056	86	120	12		ABCDEFGHIJabcdefghij0123456789
Letter Gothic	0057	87	120	12		ABCDEFGHIJabcdefghij0123456789
Prestige Italic	0070	112	120	12		*ABCDEFGHIJabcdefghij0123456789*
Boldface Italic PSM	009b	155	120	PS		***ABCDEFGHIJabcdefghij0123456789***
Essay PSM	00a0	160	120	PS		ABCDEFGHIJabcdefghij0123456789
Essay Italic PSM	00a2	162	120	PS		***ABCDEFGHIJabcdefghij0123456789***
Arabic Yasmin PSM	00a6	166	120	PS		ABCDEFGHIJabcdefghij0123456789
Arabic Expanded PSM	00a9	169	120	PS		ABCDEFGHIJabcdefghij0123456789
Essay Light PSM	00ad	173	120	PS		ABCDEFGHIJabcdefghij0123456789
Document PSM	00af	175	120	PS		ABCDEFGHIJabcdefghij0123456789
Gothic Text	00cc	204	108	13		ABCDEFGHIJabcdefghij0123456789
Serif Text	00e5	229	96	15		**ABCDEFGHIJabcdefghij0123456789**
Gothic Text	00e6	230	96	15		**ABCDEFGHIJabcdefghij0123456789**
Courier	00f4	244	288	5		ABCDEFGHIJabcdefghij0123456789
Courier	00fc	252	84	17		ABCDEFGHIJabcdefghij0123456789
Courier Super/Subscr.	00fe	254	84	17		ABCDEFGHIJabcdefghij0123456789
Arabic Kateb	0109	265	180	8		ABCDEFGHIJabcdefghij0123456789
Gothic Text	0119	281	72	20		ABCDEFGHIJabcdefghij0123456789
Gothic Text	0122	290	54	27		ABCDEFGHIJabcdefghij0123456789
Letter Gothic Bold	0194	404		SC		**ABCDEFGHIJabcdefghij0123456789**
Courier Bold	01a4	420		SC		**ABCDEFGHIJabcdefghij0123456789**
Sonoran Serif	1137	4407	54	TYPO	8	ABCDEFGHIJabcdefghij0123456789
Sonoran Serif	1137	4407	66	TYPO	10	ABCDEFGHIJabcdefghij0123456789
Sonoran Serif	1137	4407	78	TYPO	12	ABCDEFGHIJabcdefghij0123456789
Sonoran Serif Bold	114b	4427	66	TYPO	10	**ABCDEFGHIJabcdefghij0123456789**
Sonoran Serif Bold	114b	4427	108	TYPO	12	**ABCDEFGHIJabcdefghij0123456789**
Sonoran Serif Bold	114b	4427	162	TYPO	24	**ABCDEFGHIJabcdefghij0123456789**
Sonoran Serif Italic	11b7	4535	66	TYPO	10	*ABCDEFGHIJabcdefghij0123456789*

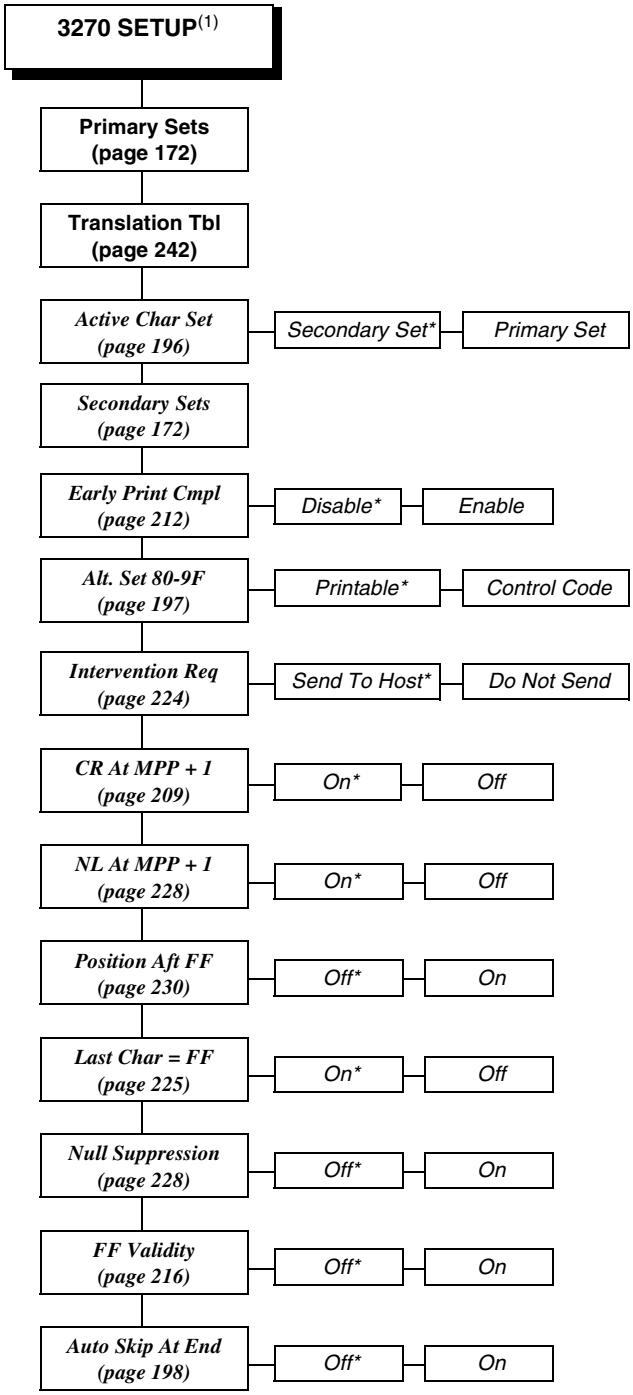
39 Resident Bitmap Fonts
2 Scalable Fonts

TYPO = Typographic
PS = Proportionally Spaced
SC = Scalable

NOTE: The Scalable fonts are currently rendered at 12 points.
They are scalable to any integer point size.

Figure 5. IPDS Fonts - 3816 Emulation Sample Printout

TN3270 SETUP



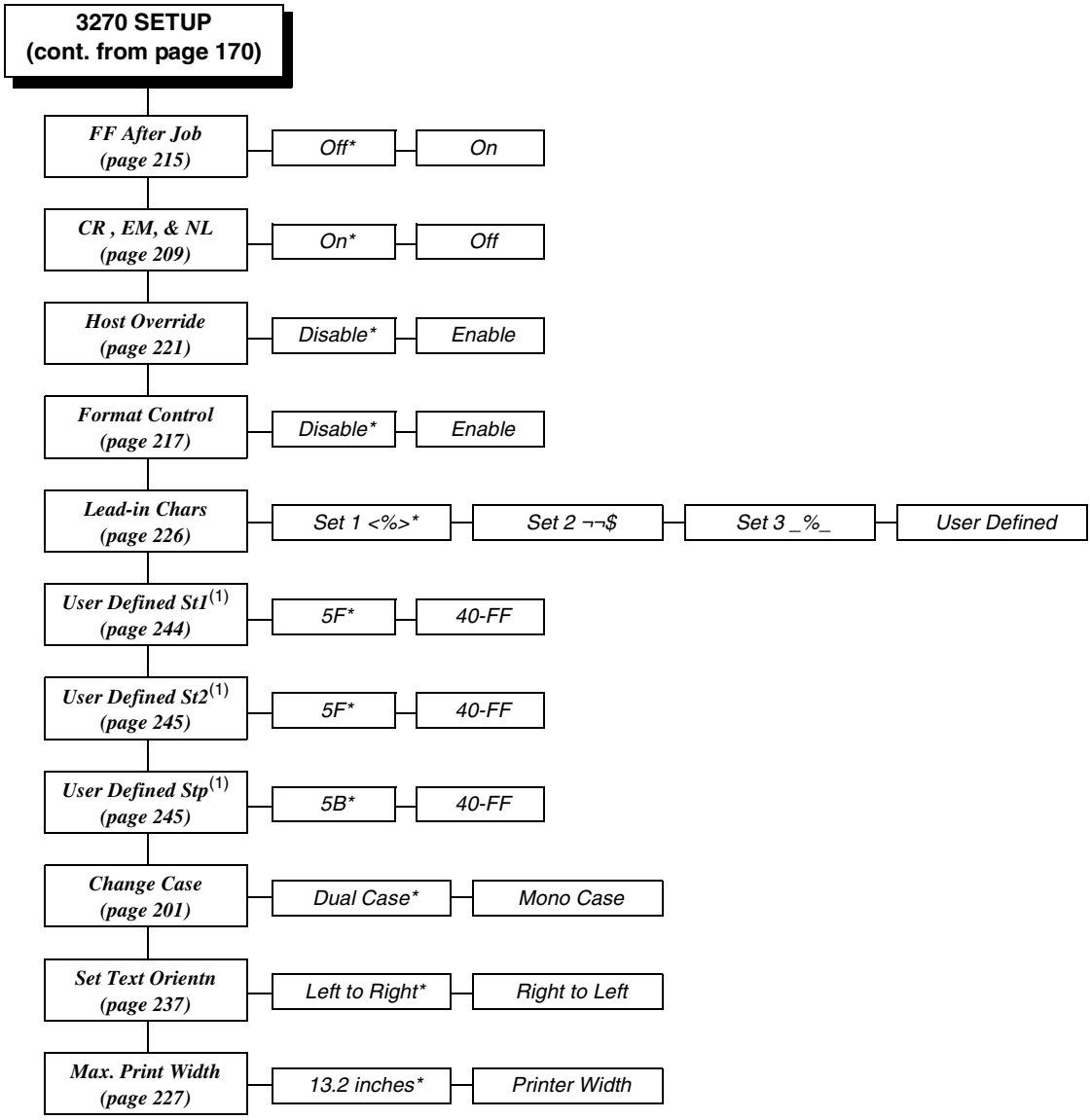
Notes:

* = Factory Default

Italicized items are available only when you enable Admin User (in the PRINTER CONTROL menu).

[1] This menu appears only if the TN5250/TN3270 option is installed.

Continued at the top of next page



Notes:

* = Factory Default

Italicized items are available only when you enable Admin User (in the PRINTER CONTROL menu).

[1] This menu appears only if you select the "User Defined" option in the "Lead-in Chars" menu.

TN3270 Setup - Primary and Secondary Sets

Primary Sets (from page 170)

0037 English US*
0037 Eng Nether
0285 English UK
0273 Austr/Germ
0274 Belg. Old
0275 Brazilian
0260 Canad Fren
0277 Danish
0287 Danish Alt
0278 Finnish
0288 Finn. Alt
0297 French
0500 Internat 5
0280 Italian
0281 Japan. Eng
0282 Portuguese
0284 Span Speak
0289 Span. Alt
0500 Swiss Bil
0500 Belg. New
0803 Hebrew Old
0424 Hebrew
0892 OCR A
0893 OCR B
0420 Arabic
0880 Cyril. Old
0423 Greek Old
875 Gr New Euro
0871 Icelandic
0290 Japan Kata
0870 Latin 2
0838 Thai
1026 Turkish
0890 Yugos. Old
1097 Farsi
1025 Cyrillic
0905 Turk. Old
0256 Intern. 1
0924 Euro Lat-9
1140 Euro Eng.
1141 Euro Aust.
1142 Euro Dan.
1143 Euro Finn.
1144 Euro Ital.
1145 Euro Span.
1146 Euro UK
1147 Euro Fren.
1148 Euro Swiss
1149 Euro Ice.

Secondary Sets (from page 170)

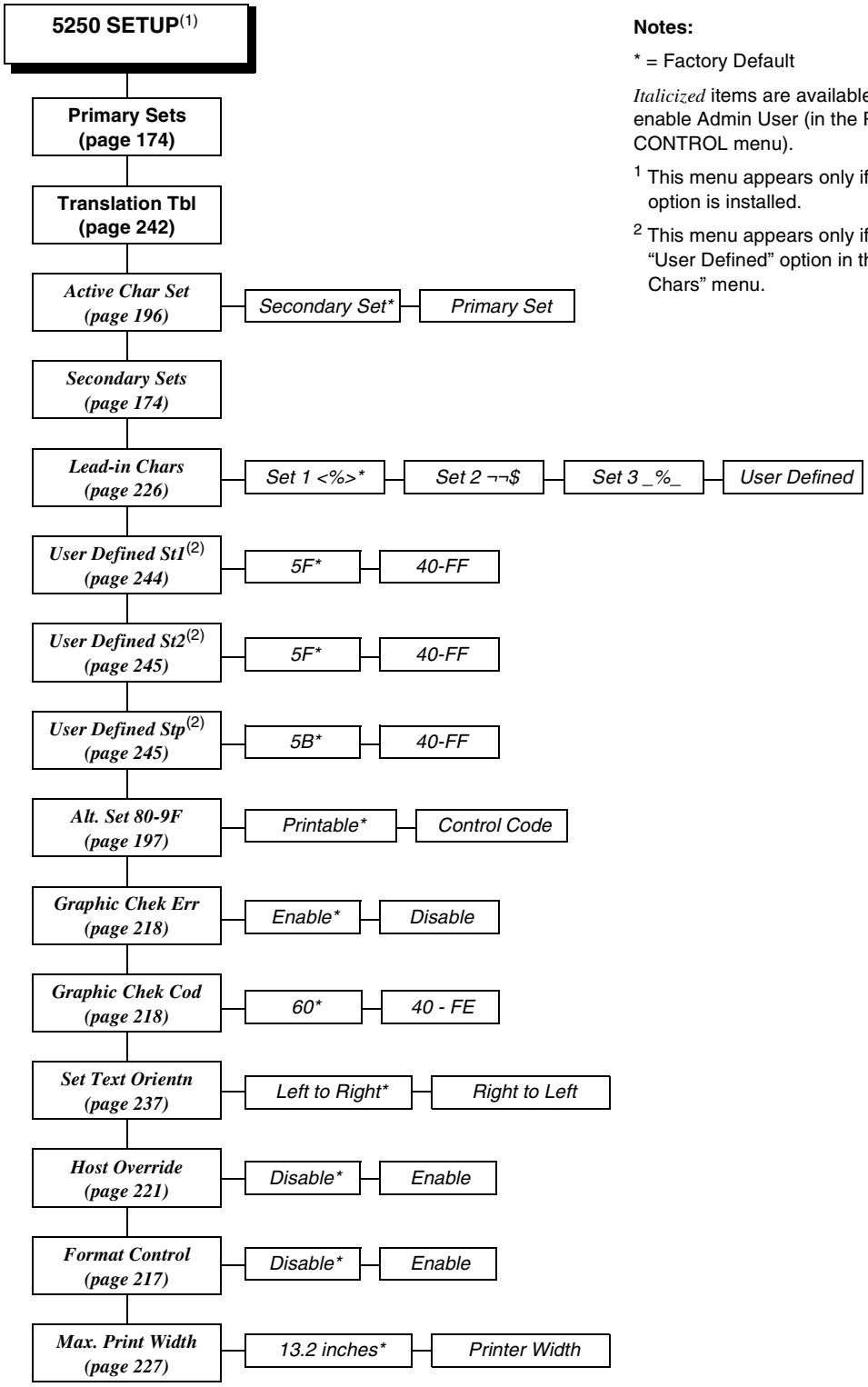
English US*
English UK
Austrian/German
German (Alt)
Belgian
Brazilian
Canadian French
Danish/Norweg.
Danish (Alt)
Finnish/Swedish
Finnish (Alt)
French
International
Italian
Japanese Eng.
Japanese Katak.
Portuguese
Portug. (Alt)
Spanish
Spanish (Alt)
Spanish Speak.
Swiss Fren/Ger
Old Hebrew
Hebrew
Farsi/Latin
Greek Old
Greek New
Arabic
Turkish
Turkish Old
Latin 2/ROECE
Yugoslavian

Notes:

* = Factory Default

Although these options are listed vertically here, use your plus (+) and minus (-) keys to cycle through the options when you are operating your printer.

TN5250 SETUP



Notes:

* = Factory Default

Italicized items are available only when you enable Admin User (in the PRINTER CONTROL menu).

[1] This menu appears only if the TN5250 option is installed.

[2] This menu appears only if you select the "User Defined" option in the "Lead-in Chars" menu.

TN5250 Setup - Primary and Secondary Sets

5250 SETUP

Primary Sets (from page 174)

0037 English US*
0037 Eng Nether
0500 Swiss Bil
0500 Belg. New
0273 Austr/Germ
0274 Belg. Old
0275 Brazilian
0260 Canad Fren
0277 Danish
0278 Finnish
0297 French
0280 Italian
0281 Japan. Eng
0282 Portuguese
0284 Span Speak
0285 English UK
0892 OCR A
0893 OCR B
0424 Hebrew
0803 Hebrew Old
0420 Arabic
0880 Cyril. Old
0423 Greek Old
875 Gr New Euro
0871 Icelandic
0290 Japan Kata
0870 Latin 2
0838 Thai
1026 Turkish
0890 Yugos. Old
1097 Farsi
1025 Cyrillic
0256 Intern. 1
1112 Balt Mult
0924 Euro Lat-9
1122 Estonian
1140 Euro Eng.
1141 Euro Aust.
1142 Euro Dan.
1143 Euro Finn.
1144 Euro Ital.
1145 Euro Span.
1146 Euro UK
1147 Euro Fren.
1148 Euro Swiss
1149 Euro Ice.
0500 Internat 5

Secondary Sets (from page 174)

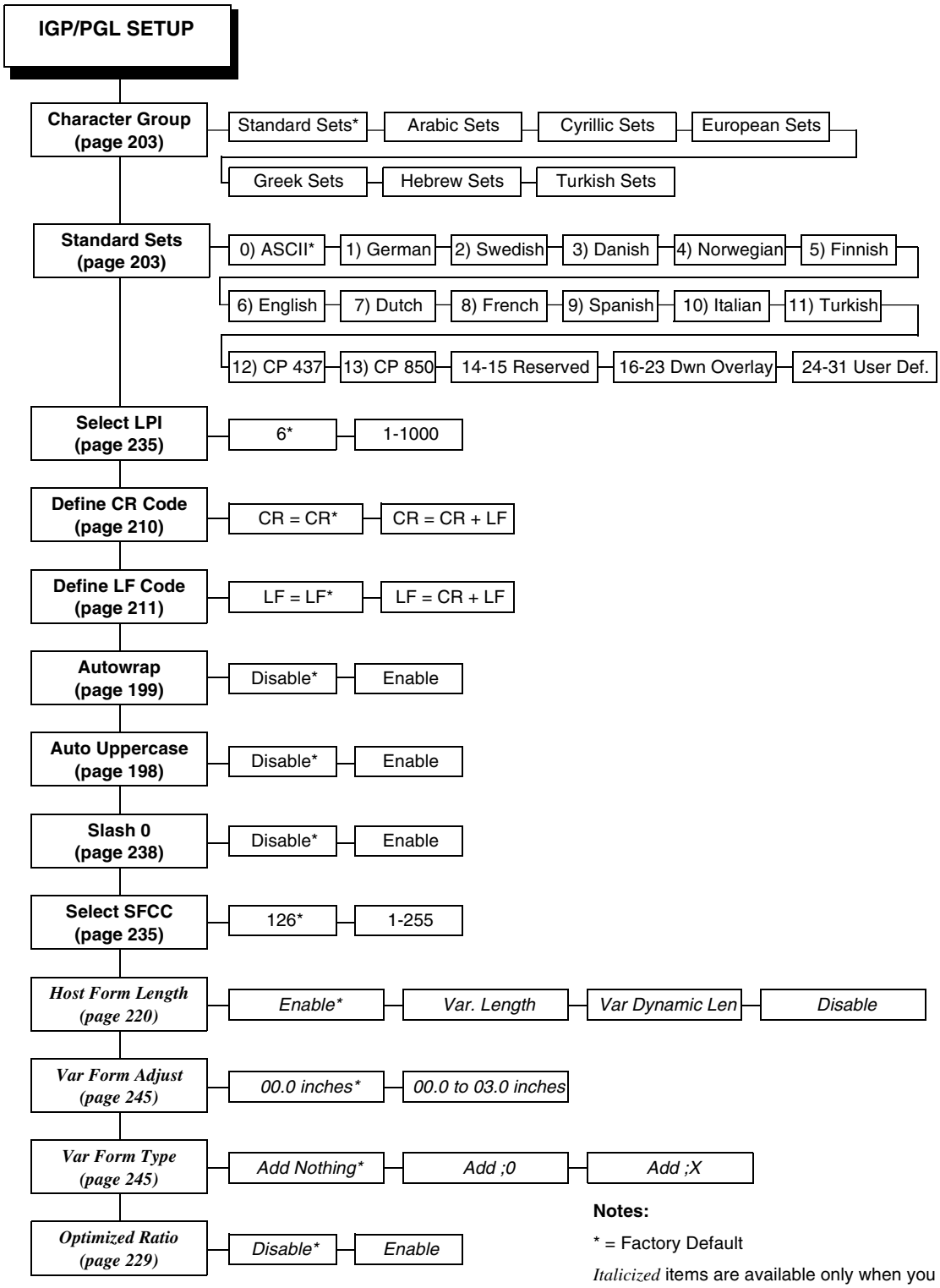
English US*
Austrian/German
Belgian
Brazilian
Canadian French
Danish/Norweg.
Finnish/Swedish
French
Italian
Japanese Eng.
Japanese Katak.
Portuguese
Spanish
Spanish Speak.
English UK
Old Hebrew
Hebrew
Farsi/Latin
Greek Old
Greek New
Arabic
Turkish
Latin 2/ROECE
Yugoslavian
Multinational

Notes:

* = Factory Default

Although these options are listed vertically here, use your plus (+) and minus (-) keys to cycle through the options when you are operating your printer.

IGP/PGL SETUP

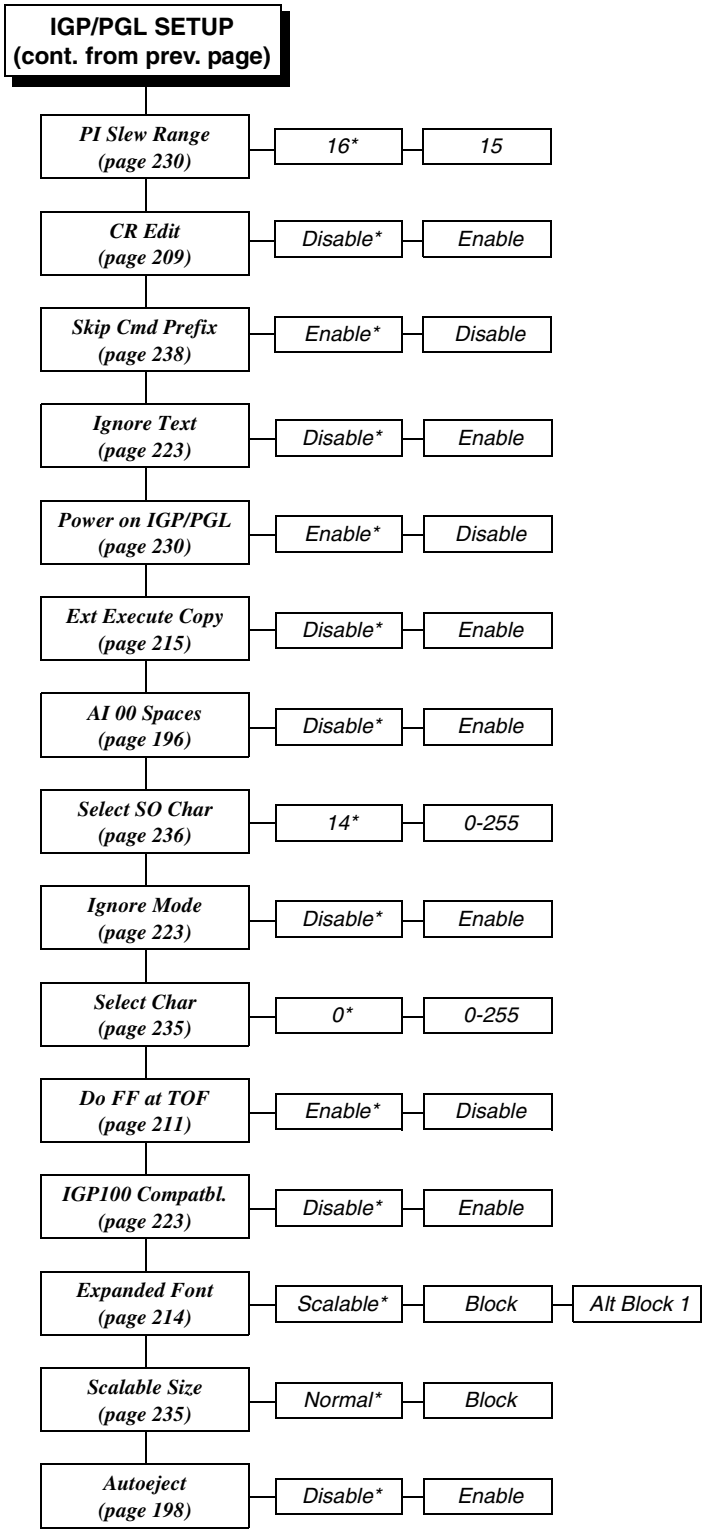


Notes:

* = Factory Default

Italicized items are available only when you enable Admin User (in the PRINTER CONTROL menu).

Continued at the top of next page

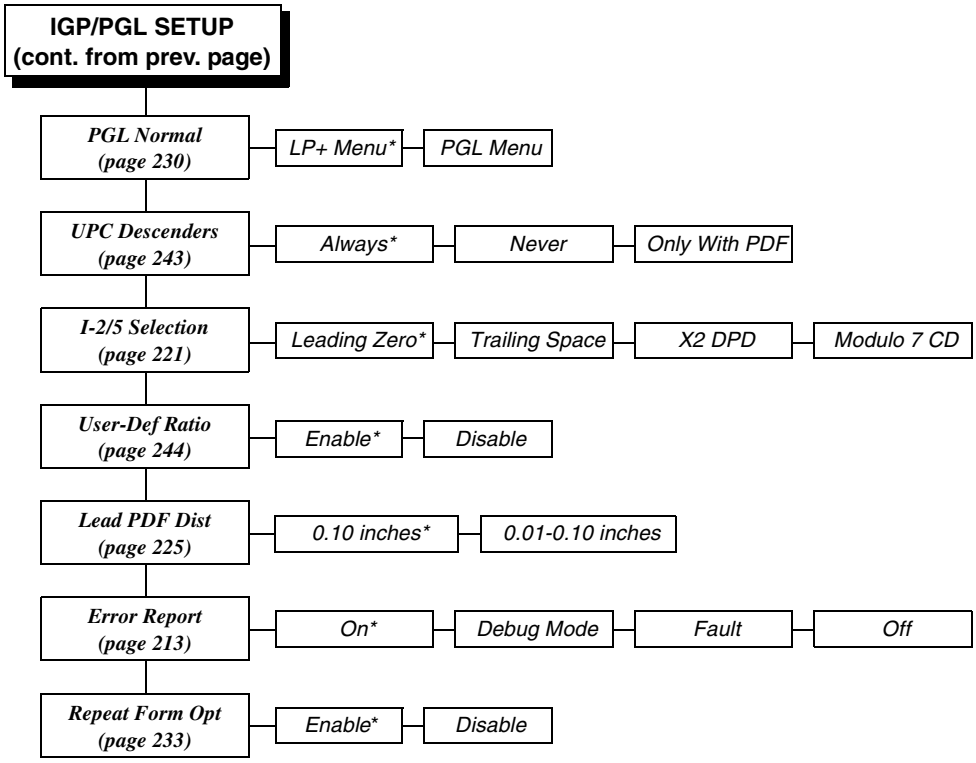


Continued at the top of next page

Notes:

* = Factory Default

Italicized items are available only when you enable Admin User (in the PRINTER CONTROL menu).

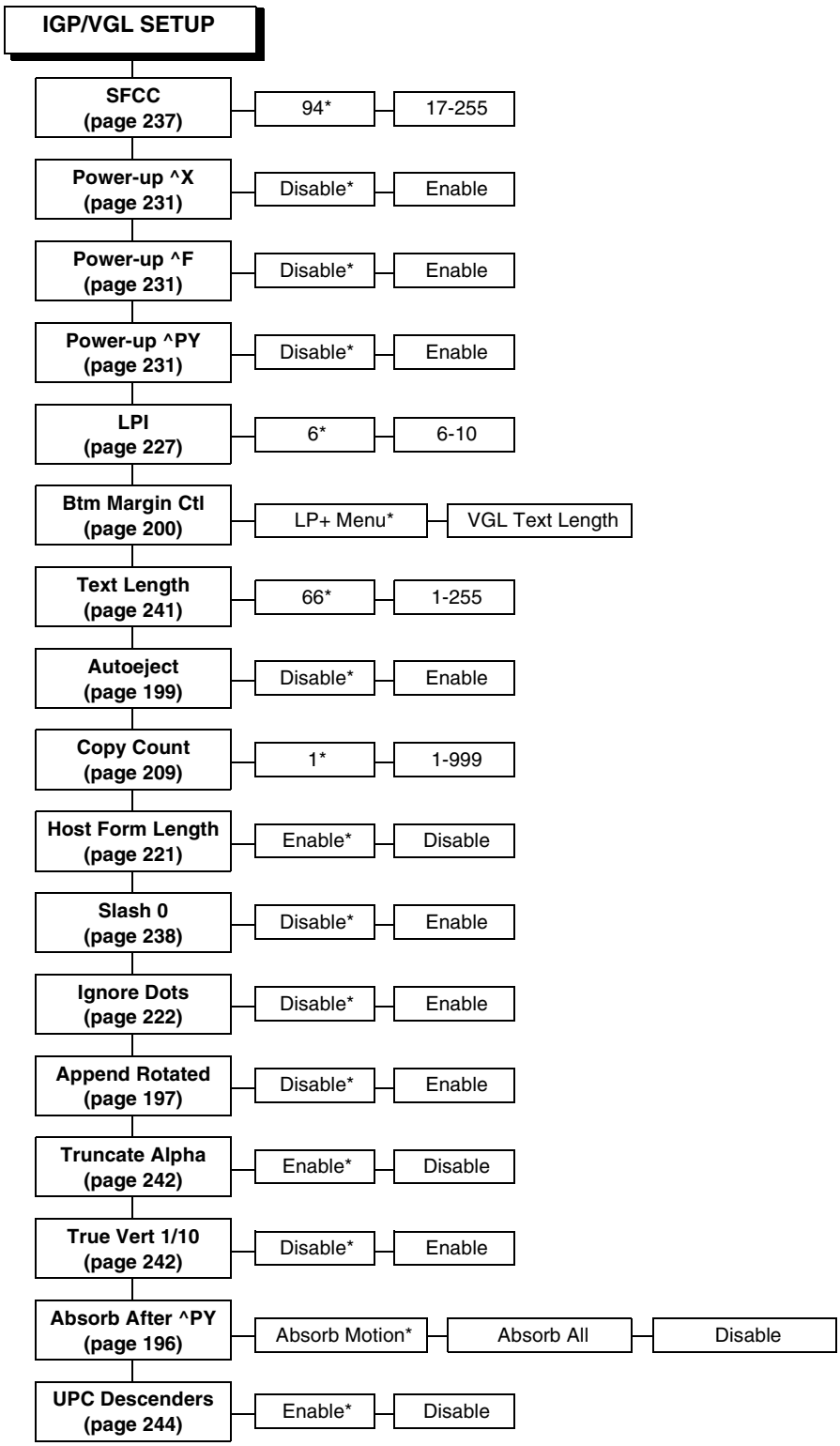


Notes:

* = Factory Default

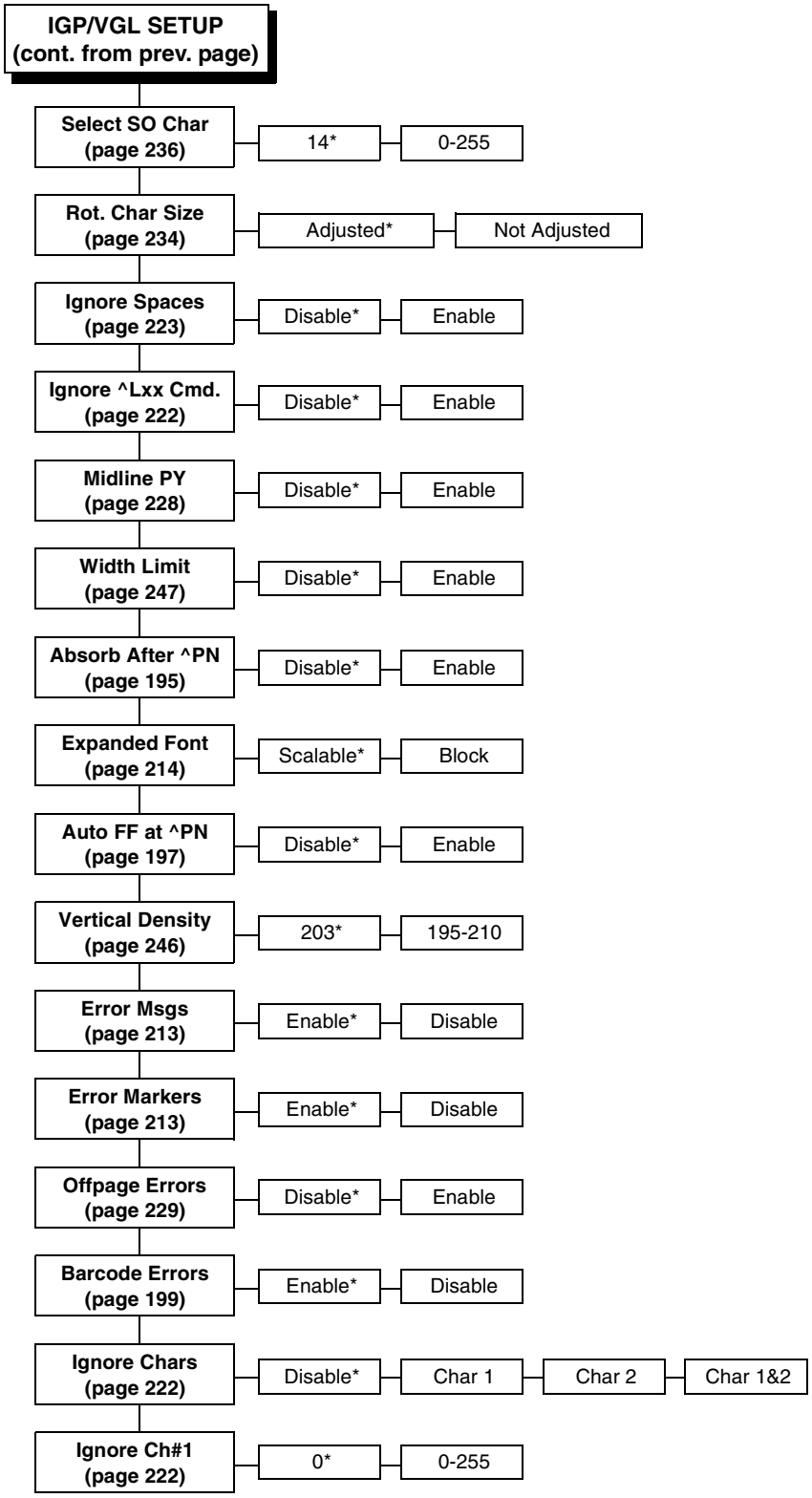
Italicized items are available only when you enable Admin User (in the PRINTER CONTROL menu).

IGP/VGL SETUP



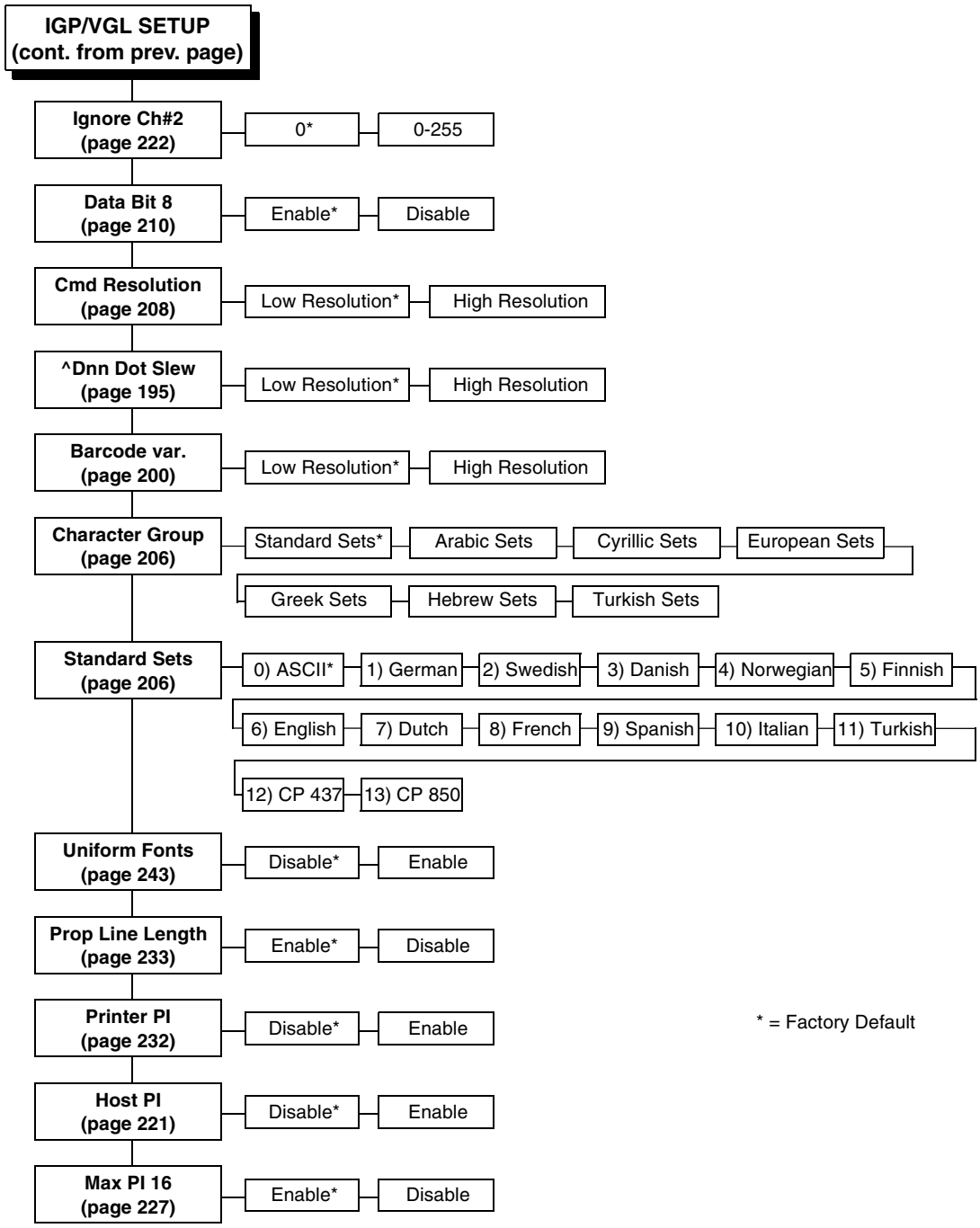
Continued at the top of next page

* = Factory Default

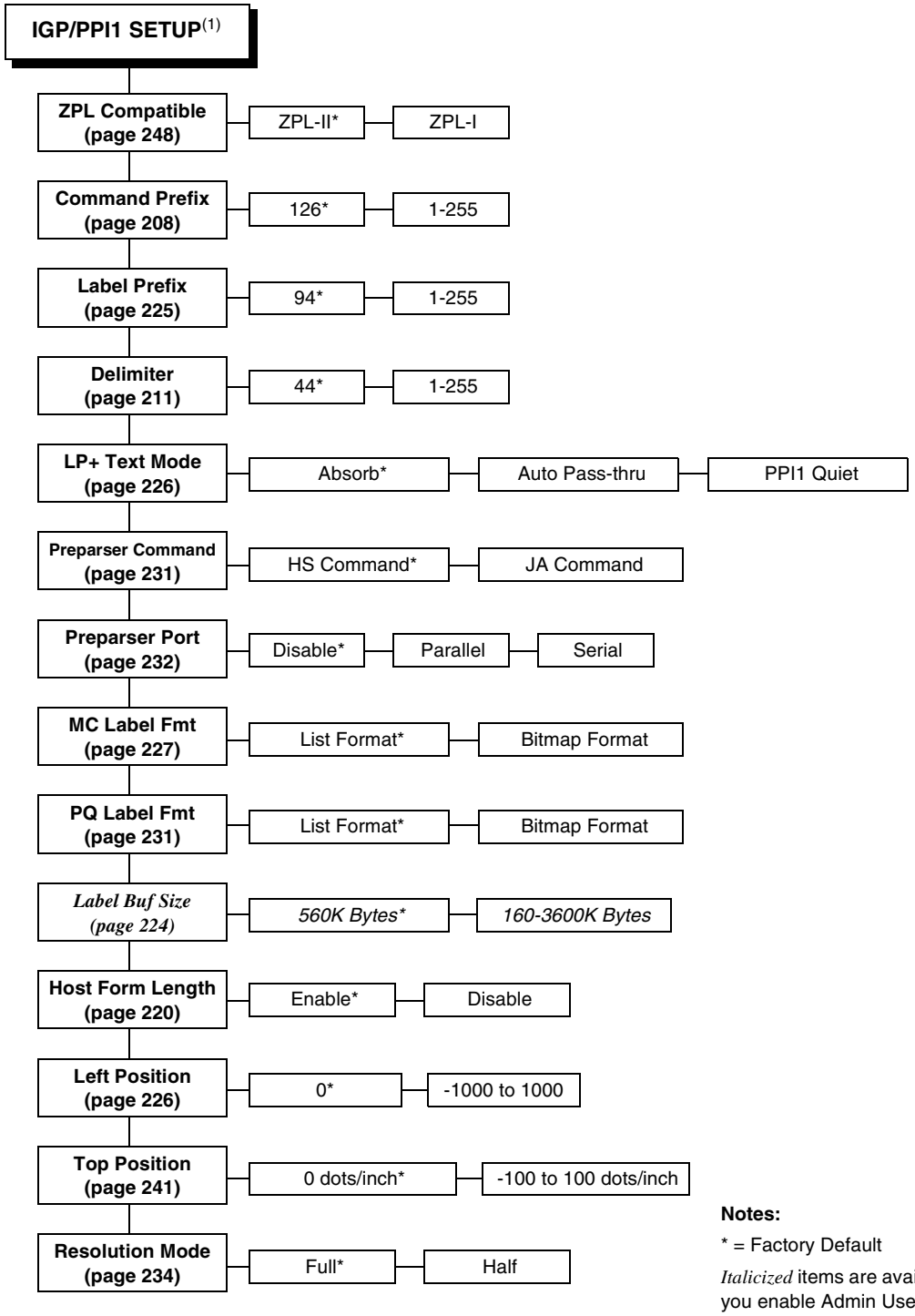


Continued at the top of next page

* = Factory Default


IGP/VGL SETUP
(cont. from prev. page)
Ignore Ch#2
(page 222)
0*
0-255
Data Bit 8
(page 210)
Enable*
Disable
Cmd Resolution
(page 208)
Low Resolution*
High Resolution
^Dnn Dot Slew
(page 195)
Low Resolution*
High Resolution
Barcode var.
(page 200)
Low Resolution*
High Resolution
Character Group
(page 206)
Standard Sets*
Arabic Sets
Cyrillic Sets
European Sets
Greek Sets
Hebrew Sets
Turkish Sets
Standard Sets
(page 206)
0) ASCII*
1) German
2) Swedish
3) Danish
4) Norwegian
5) Finnish
6) English
7) Dutch
8) French
9) Spanish
10) Italian
11) Turkish
12) CP 437
13) CP 850
Uniform Fonts
(page 243)
Disable*
Enable
Prop Line Length
(page 233)
Enable*
Disable
Printer PI
(page 232)
Disable*
Enable
Host PI
(page 221)
Disable*
Enable
Max PI 16
(page 227)
Enable*
Disable
* = Factory Default

IGP/PPI1 SETUP



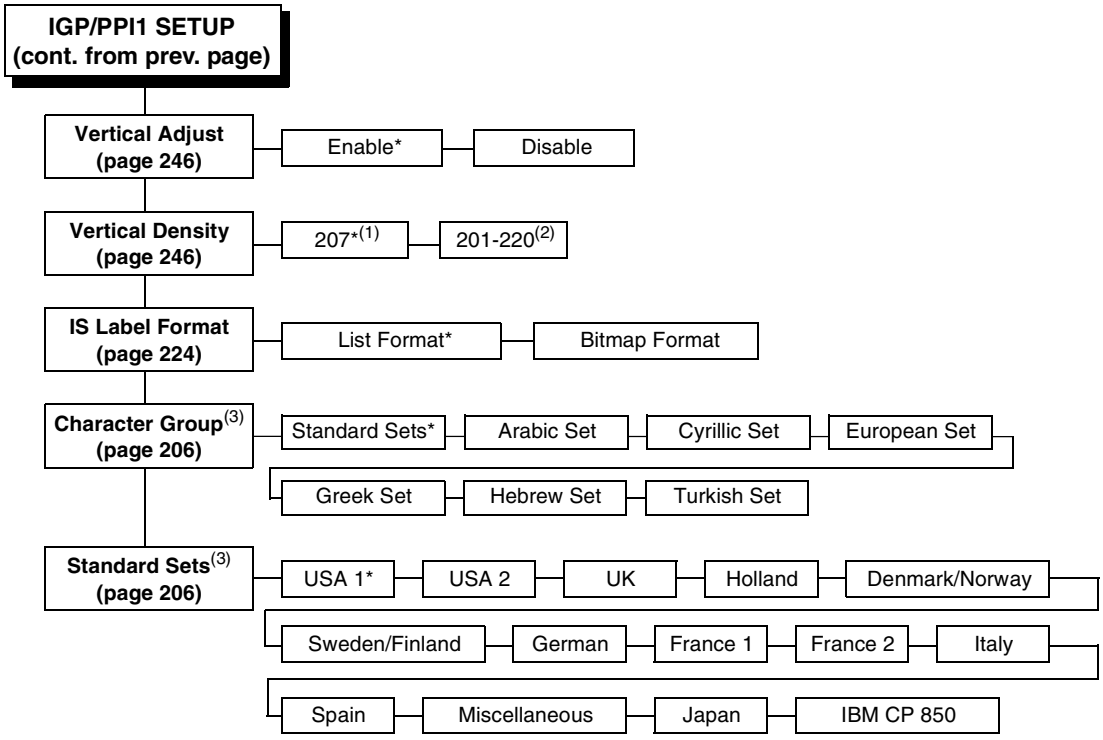
Notes:

* = Factory Default

Italicized items are available when you enable Admin User (in the PRINTER CONTROL menu).

[1] When substituting a Zebra Xi III model printer with a T5000e printer, refer to the menu conversion in Appendix F.

Continued at the top of next page



Notes:

* = Factory Default

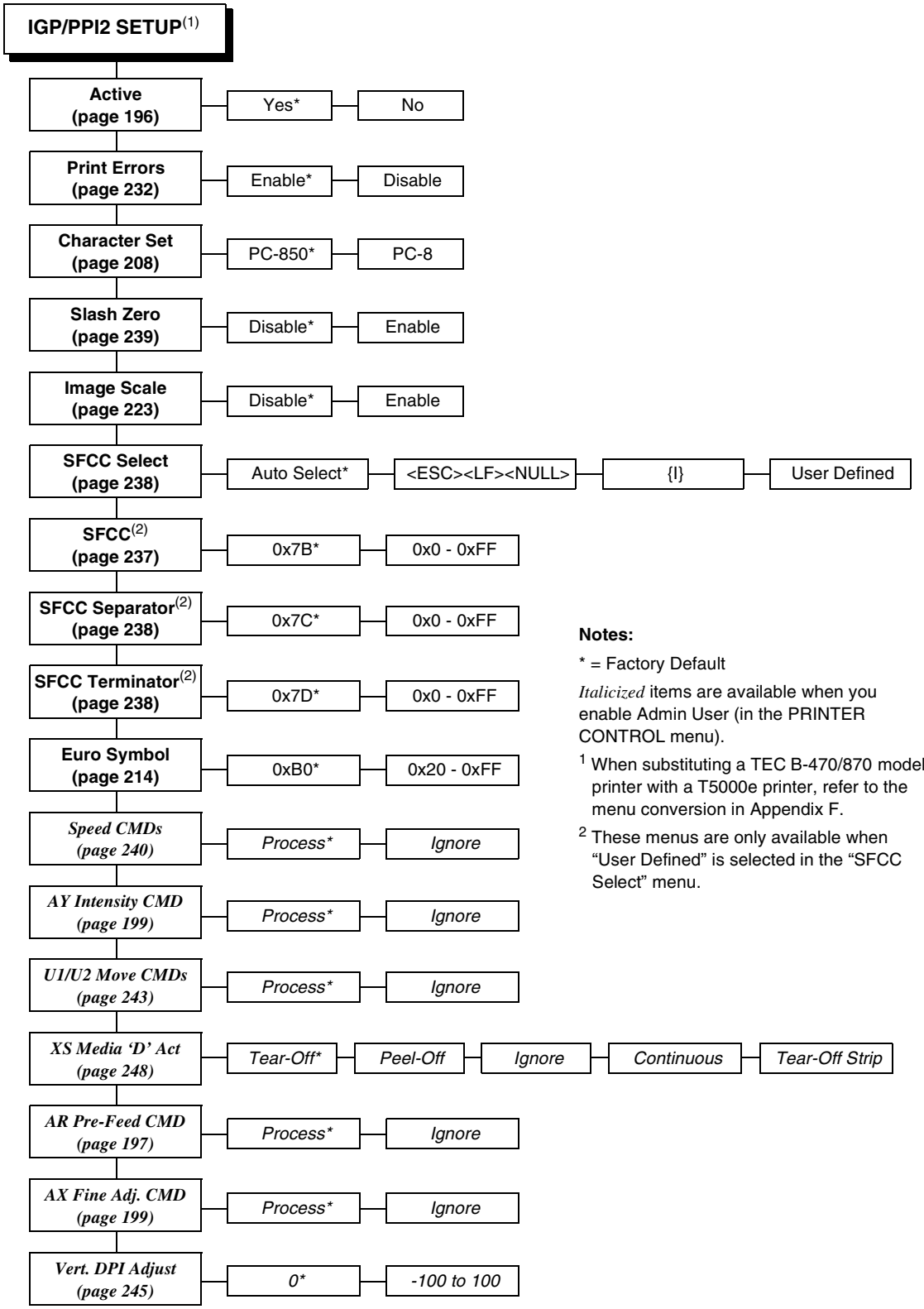
Italicized items are available when you enable Admin User (in the PRINTER CONTROL menu).

[1] Factory default for printers with 203 dpi printhead = 207 dpi.
Factory default for printers with 300 dpi printhead = 301 dpi.

[2] Range for printers with 203 dpi printhead = 201-220 dpi.
Range for printers with 300 dpi printhead = 301-330 dpi.

[3] Each character set will contain different individual characters. PPI uses scalable fonts rather than bitmapped fonts.

IGP/PPI2 SETUP



Notes:

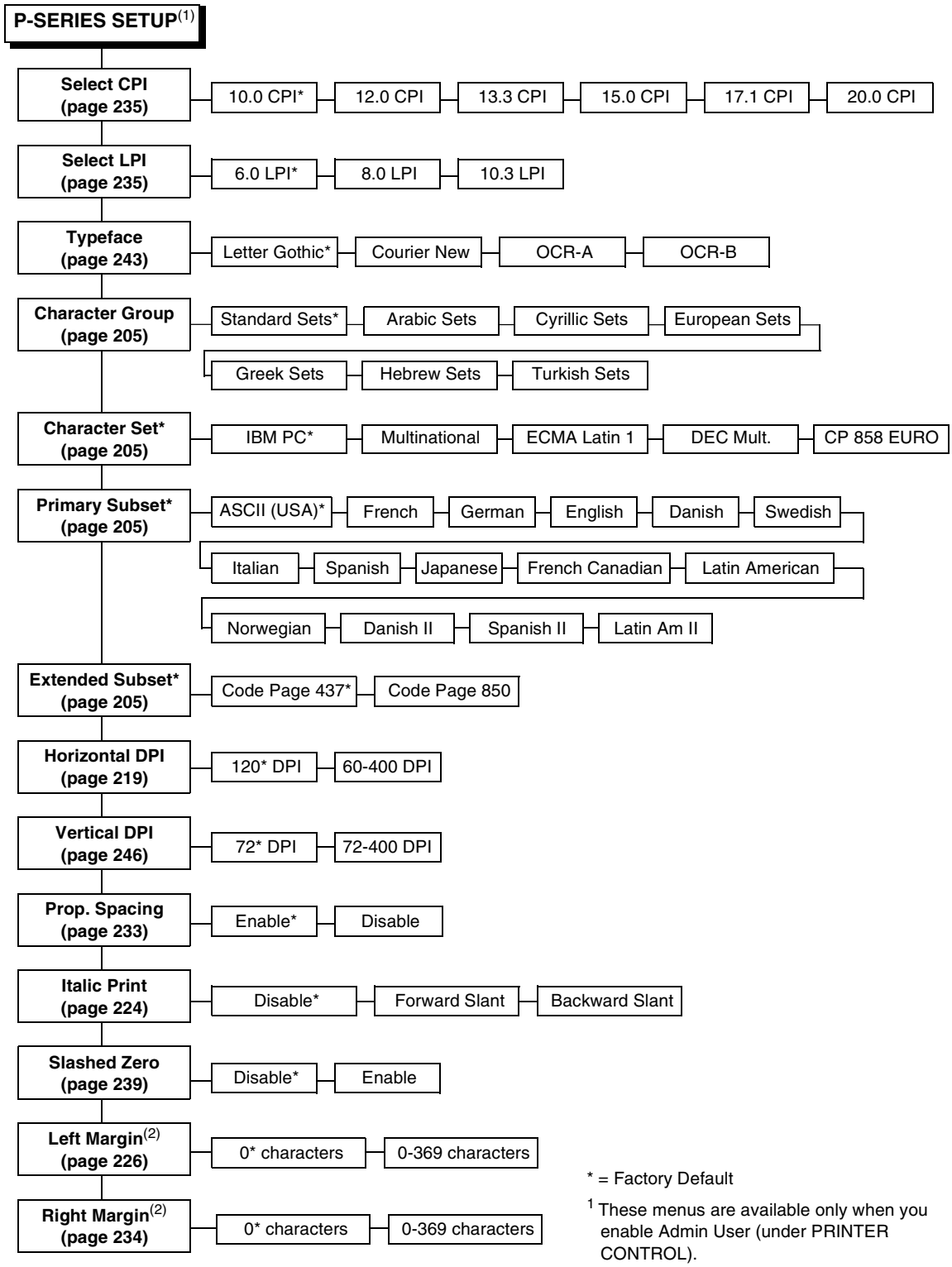
* = Factory Default

Italicized items are available when you enable Admin User (in the PRINTER CONTROL menu).

[1] When substituting a TEC B-470/870 model printer with a T5000e printer, refer to the menu conversion in Appendix F.

[2] These menus are only available when "User Defined" is selected in the "SFCC Select" menu.

P-SERIES SETUP

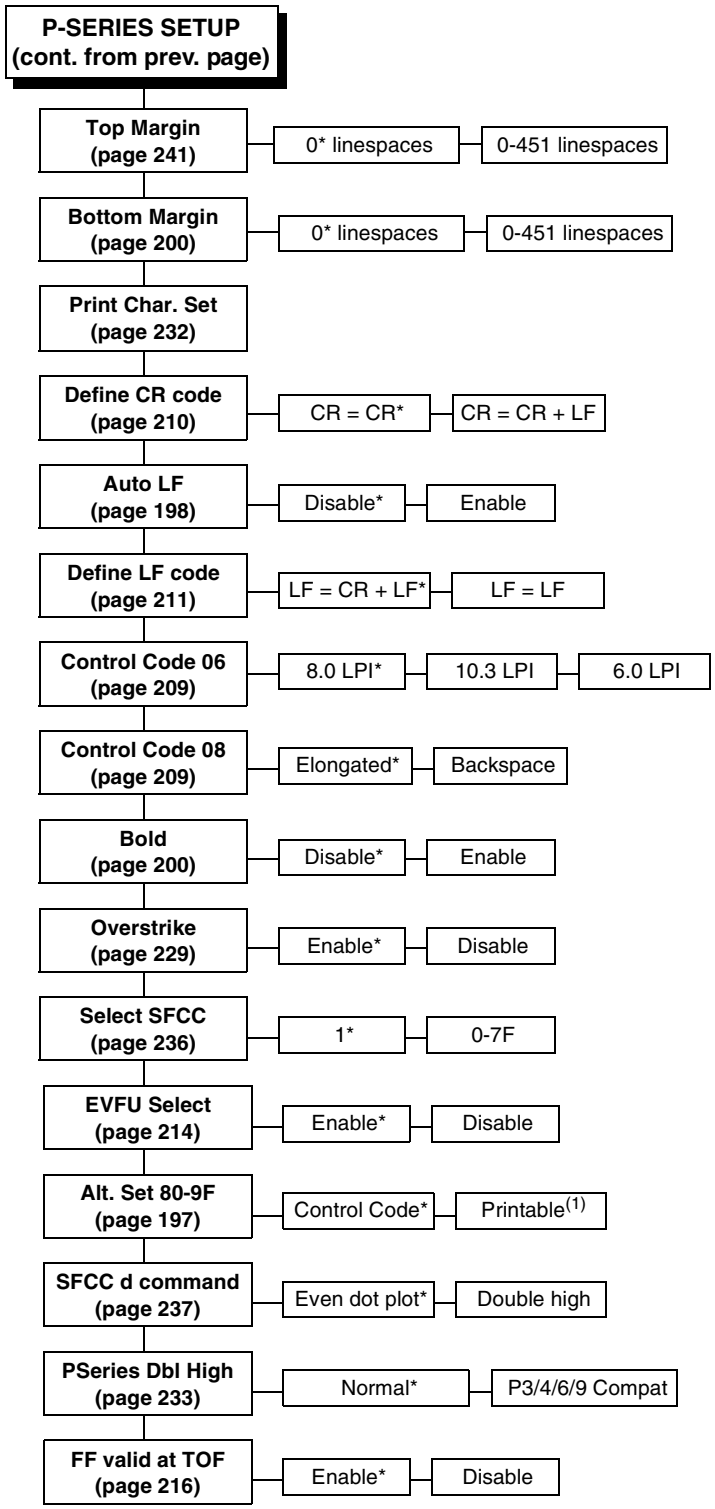


Continued at the top of next page

* = Factory Default

[1] These menus are available only when you enable Admin User (under PRINTER CONTROL).

[2] These menus do not display when the CT, TN5250, or TN3270 emulation is selected.



Notes:

* = Factory Default

[1] When the CTHI option is installed, the factory default is Printable.

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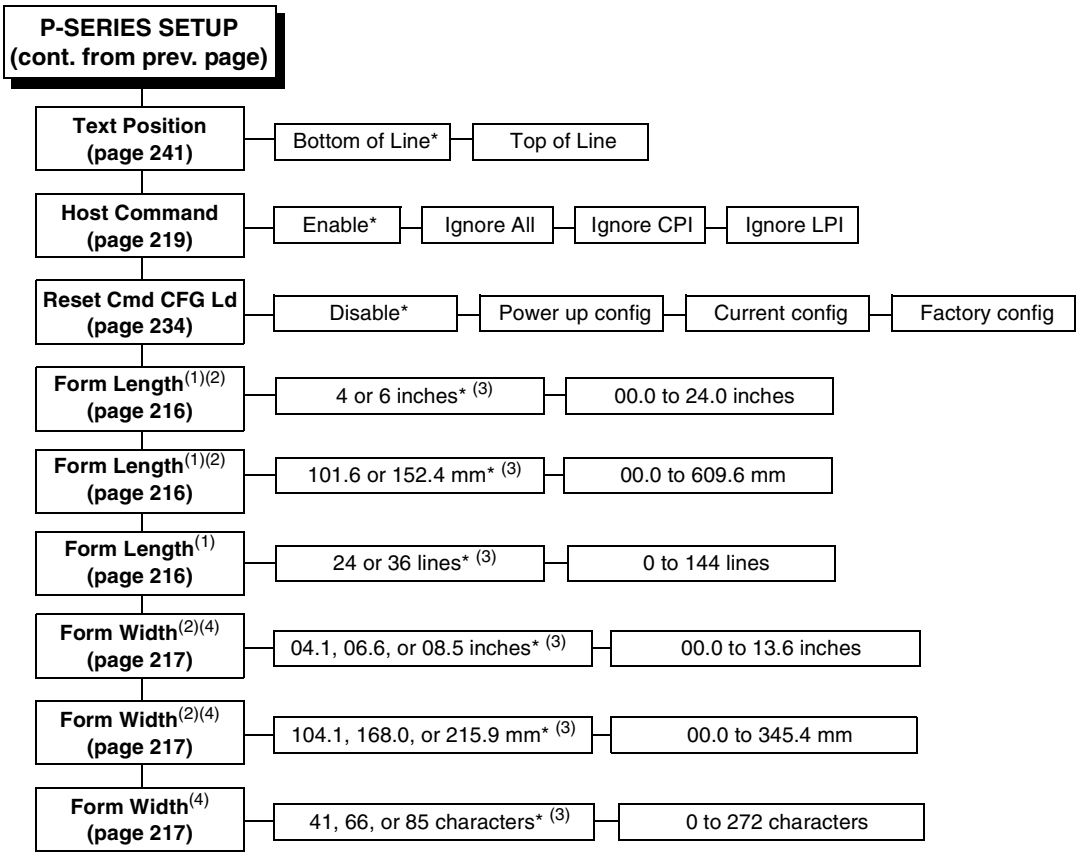


Notes:

* = Factory Default

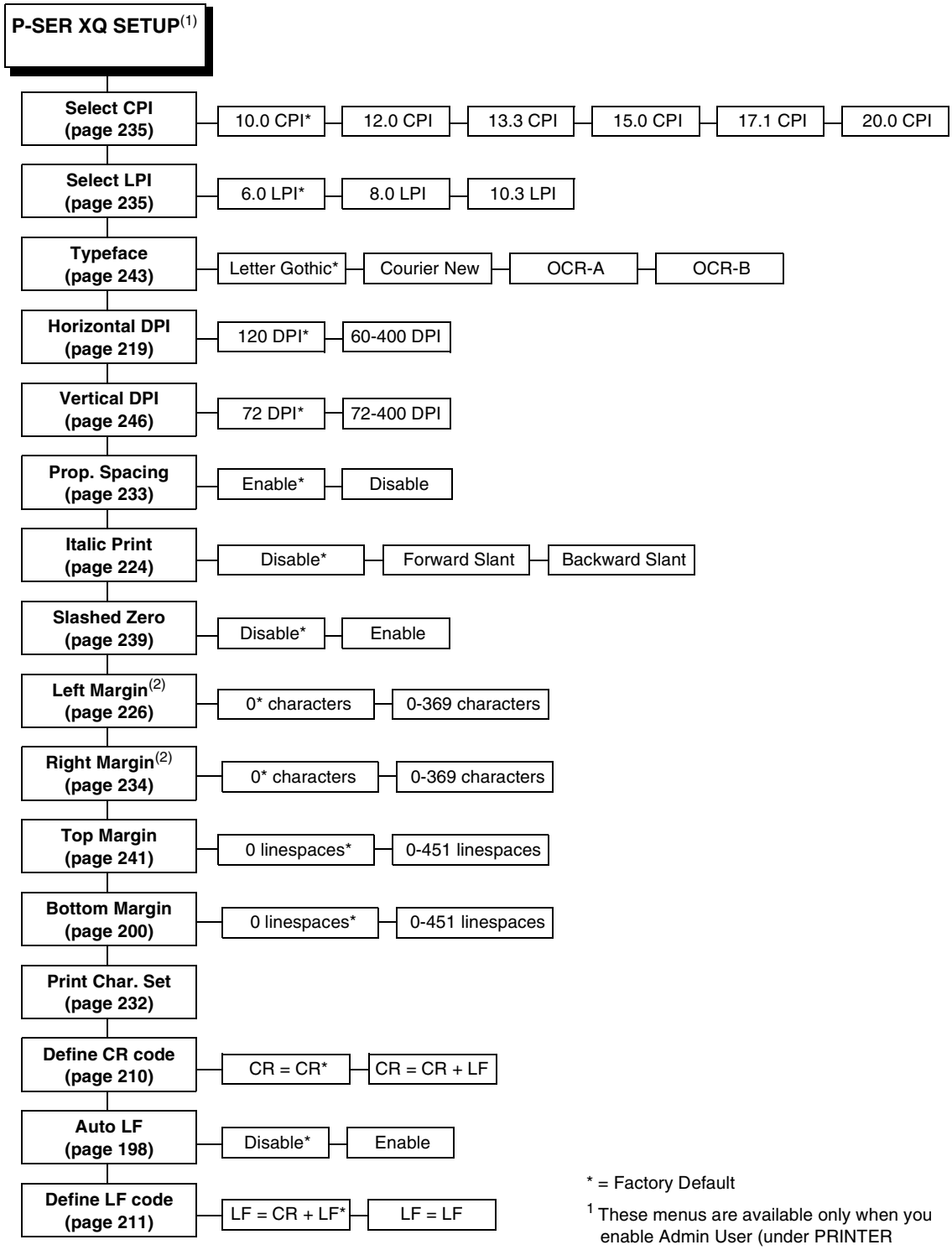
[1] All three Form Length submenus work in conjunction. When you change the default in one submenu, the default values in the other two submenus change automatically.

[2] These menus do not display when the CT, TN5250, or TN3270 emulation is selected.

[3] The factory default value depends on the width of the printer model.

[4] All three Form Width submenus work in conjunction. When you change the default in one submenu, the default values in the other two submenus change automatically.

P-SER XQ SETUP

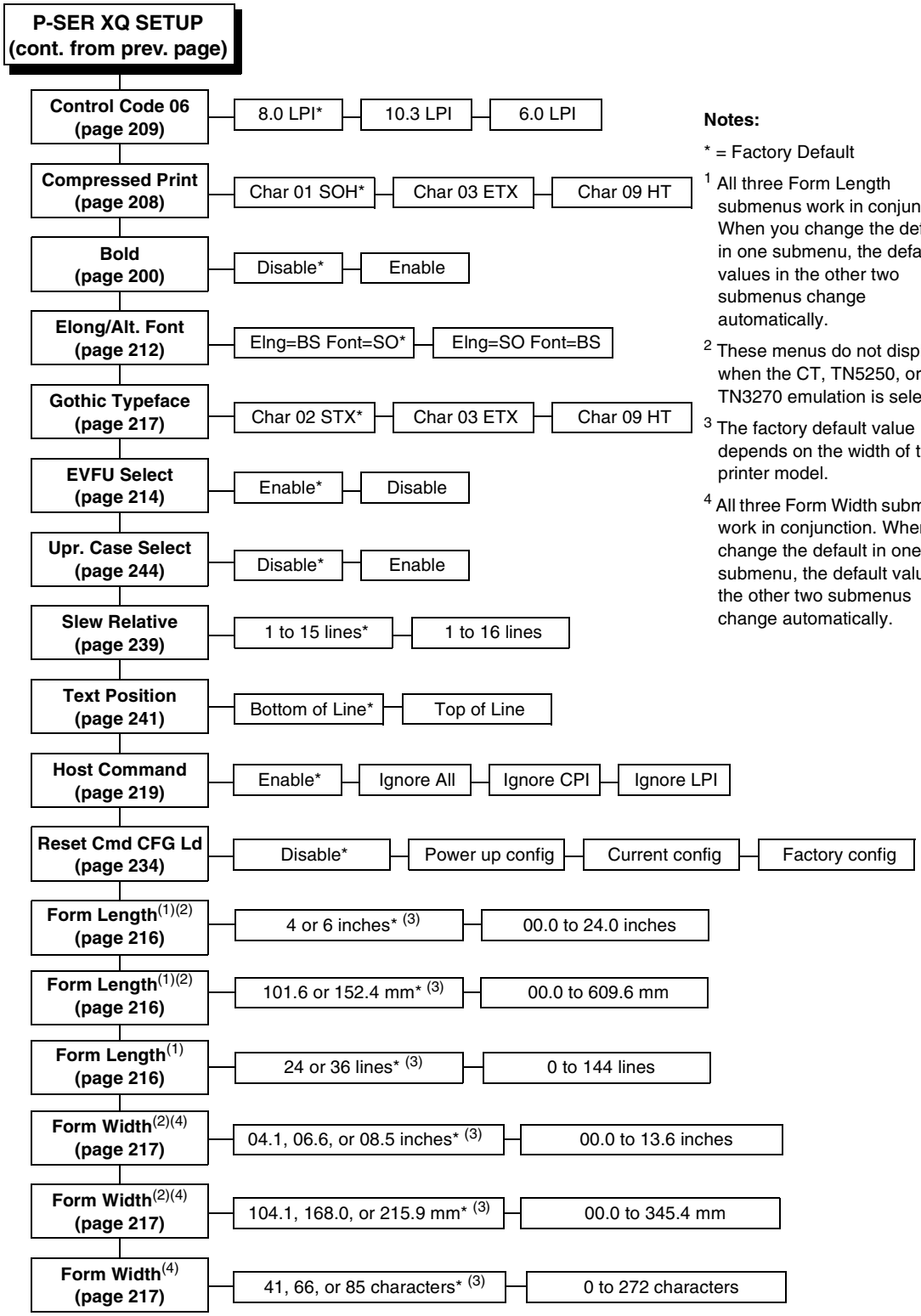


Continued at the top of next page

* = Factory Default

[1] These menus are available only when you enable Admin User (under PRINTER CONTROL).

[2] These menus do not display when the CT, TN5250, or TN3270 emulation is selected.



Notes:

* = Factory Default

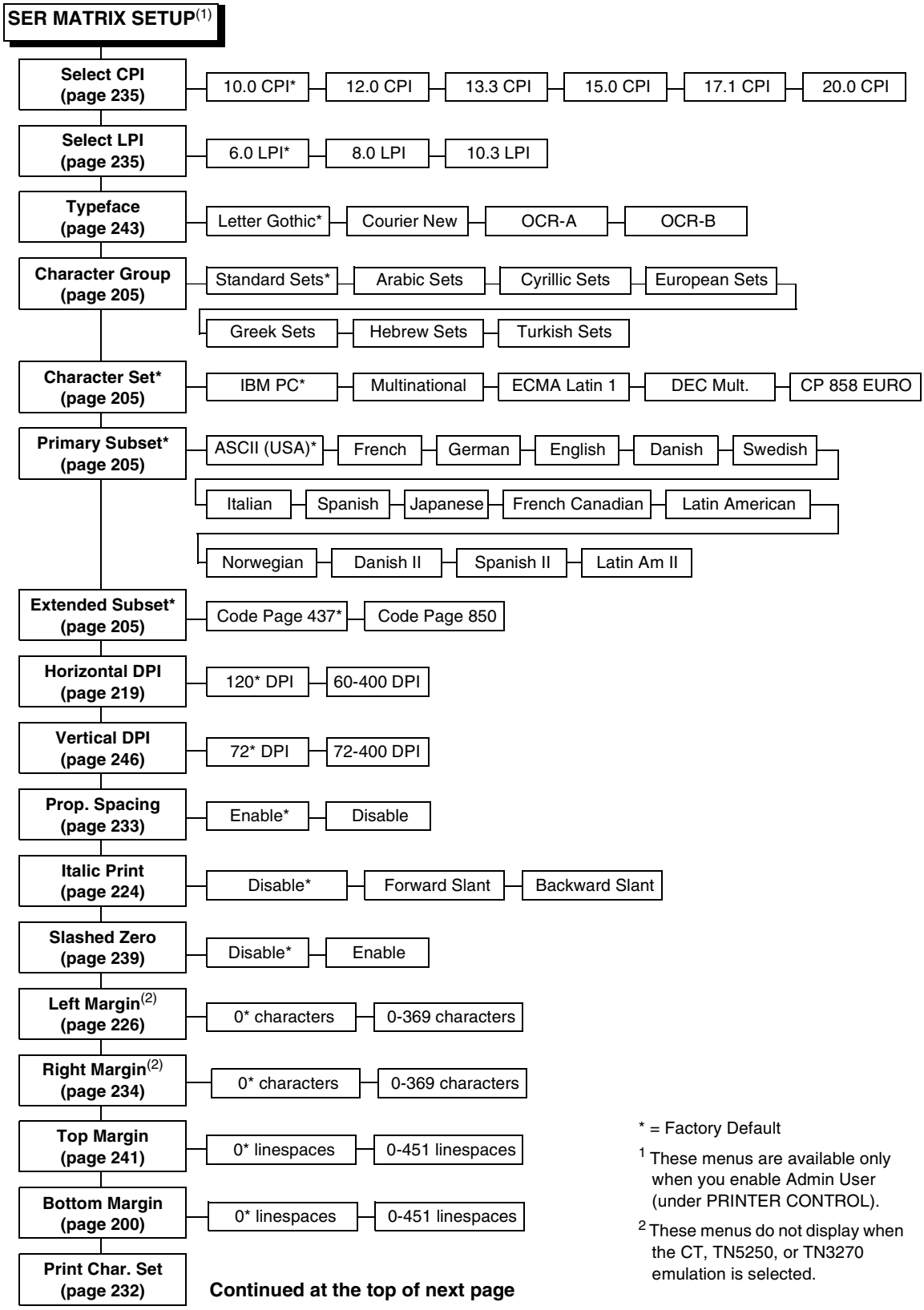
[1] All three Form Length submenus work in conjunction. When you change the default in one submenu, the default values in the other two submenus change automatically.

[2] These menus do not display when the CT, TN5250, or TN3270 emulation is selected.

[3] The factory default value depends on the width of the printer model.

[4] All three Form Width submenus work in conjunction. When you change the default in one submenu, the default values in the other two submenus change automatically.

SER MATRIX SETUP



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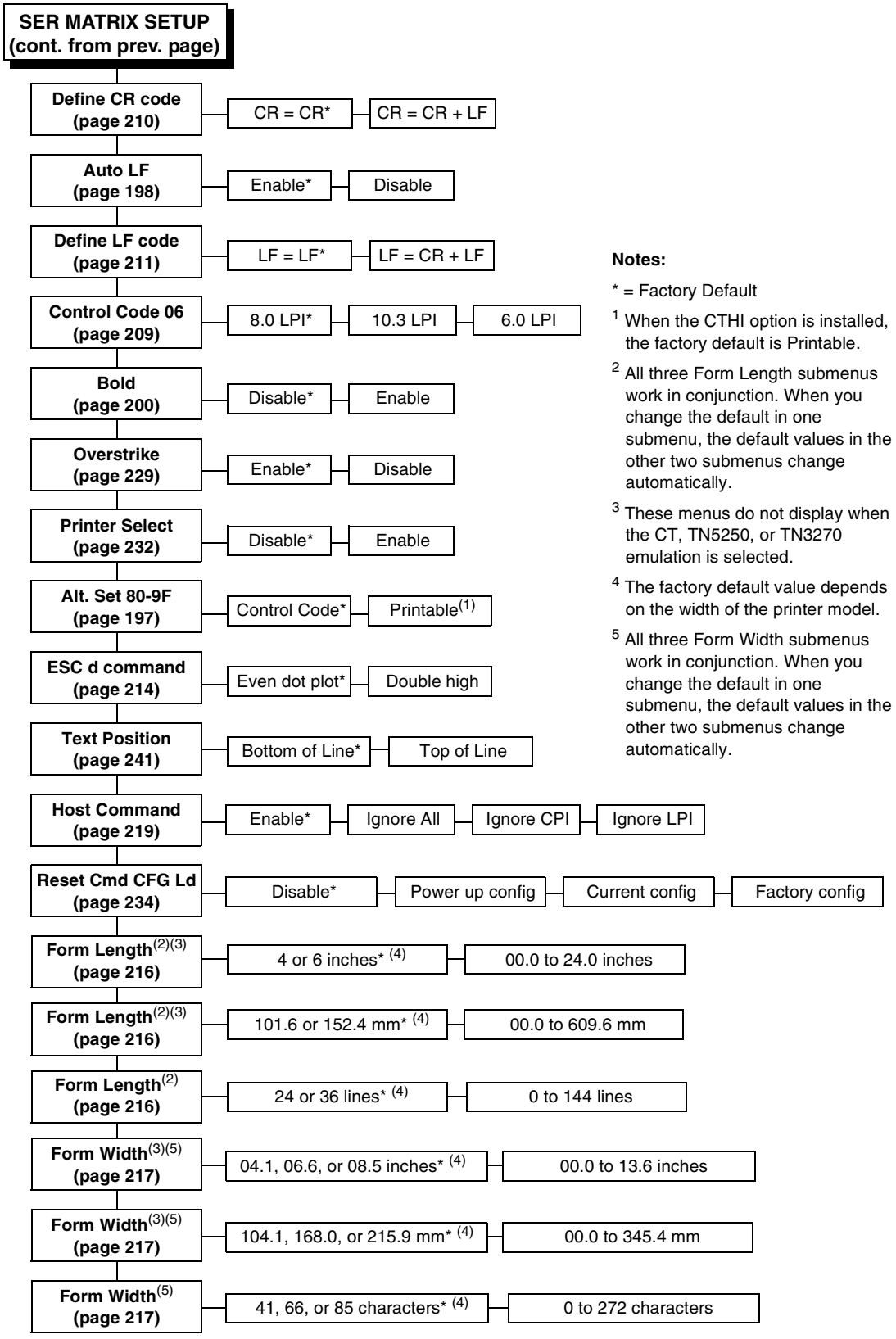
* = Factory Default

[1] These menus are available only when you enable Admin User (under PRINTER CONTROL).

[2] These menus do not display when the CT, TN5250, or TN3270 emulation is selected.



Notes:

* = Factory Default

[1] When the CTHI option is installed, the factory default is Printable.

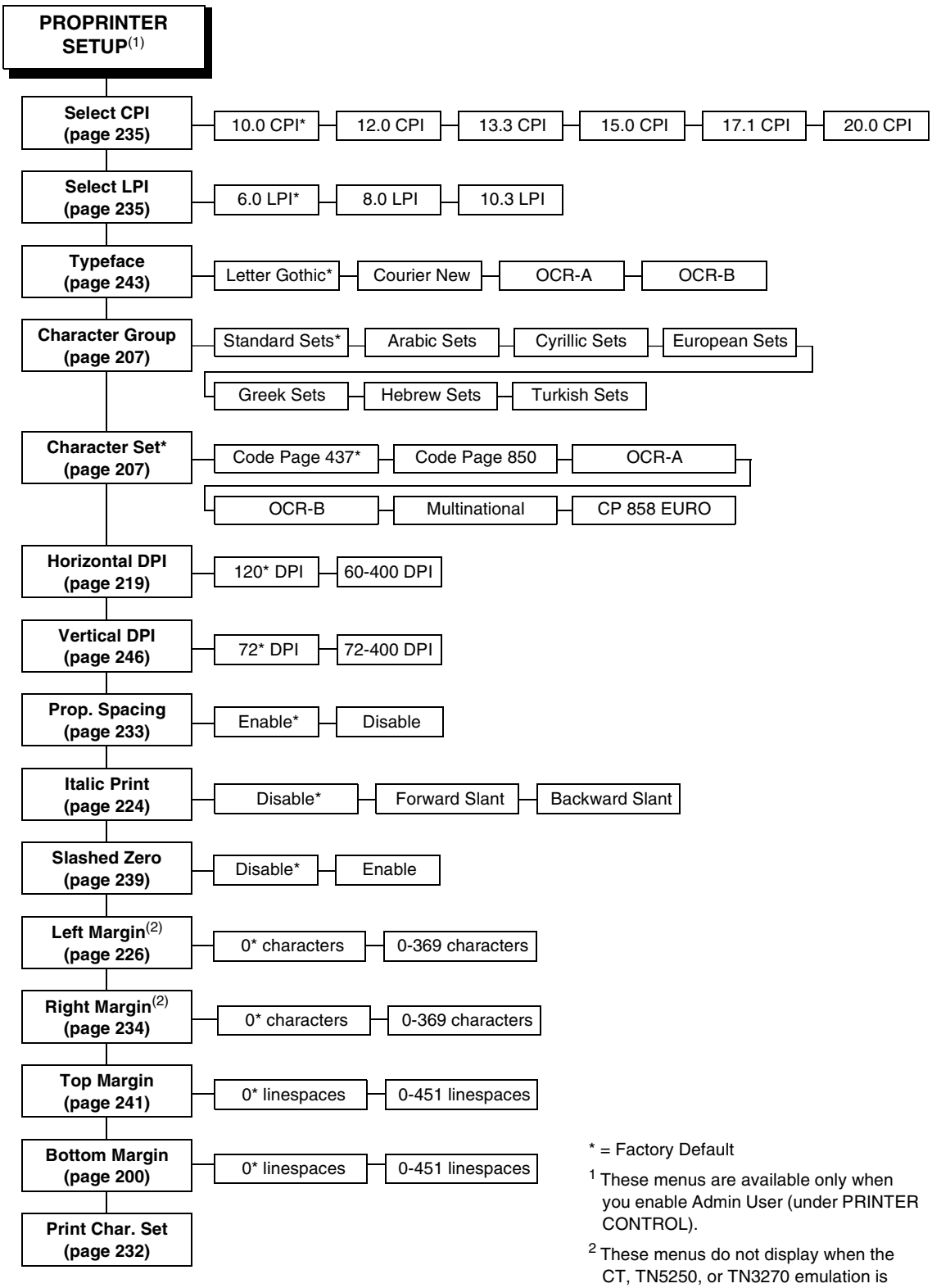
[2] All three Form Length submenus work in conjunction. When you change the default in one submenu, the default values in the other two submenus change automatically.

[3] These menus do not display when the CT, TN5250, or TN3270 emulation is selected.

[4] The factory default value depends on the width of the printer model.

[5] All three Form Width submenus work in conjunction. When you change the default in one submenu, the default values in the other two submenus change automatically.

PROPRINTER SETUP



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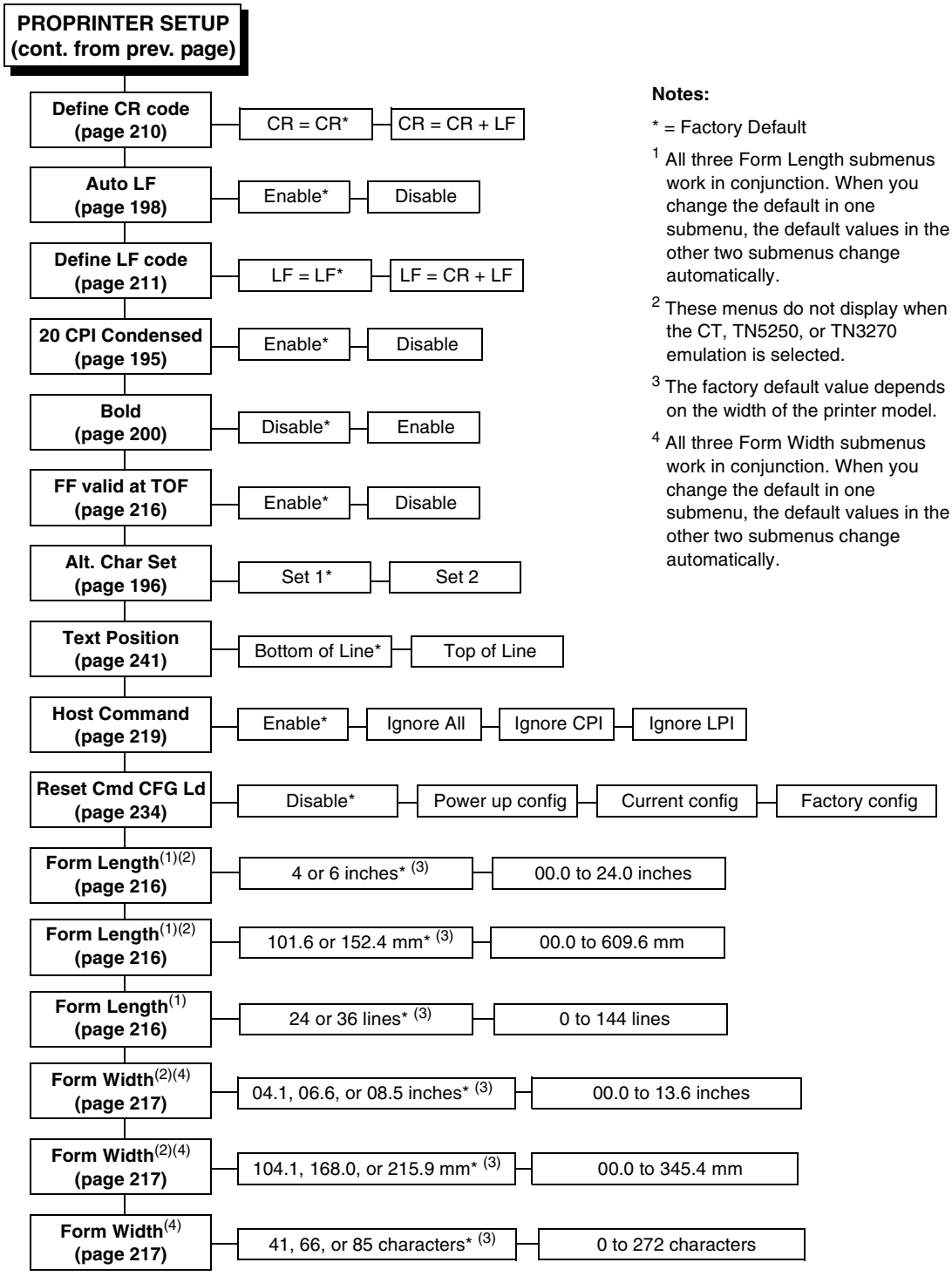
* = Factory Default

[1] These menus are available only when you enable Admin User (under PRINTER CONTROL).

[2] These menus do not display when the CT, TN5250, or TN3270 emulation is selected.



Notes:

* = Factory Default

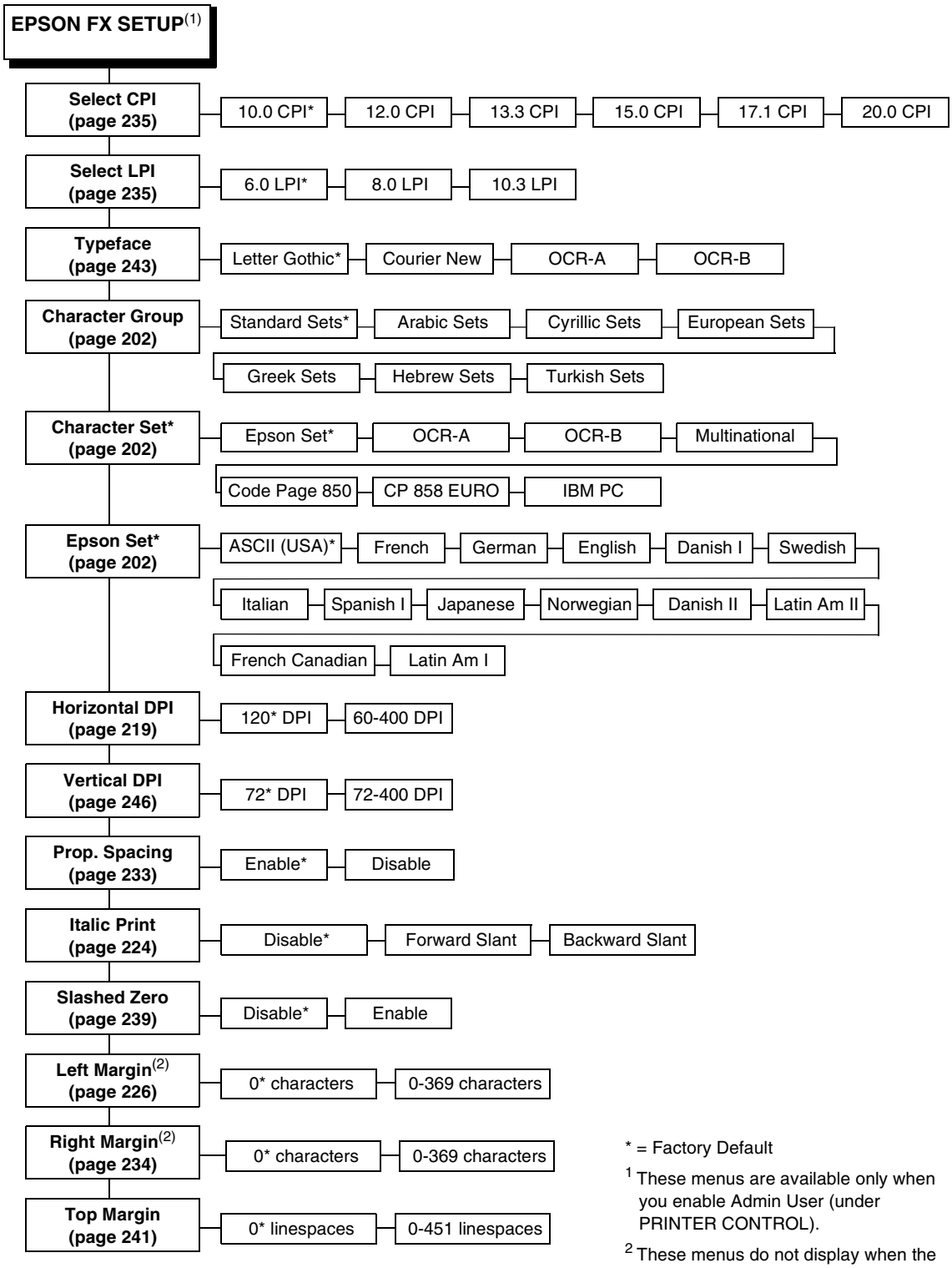
[1] All three Form Length submenus work in conjunction. When you change the default in one submenu, the default values in the other two submenus change automatically.

[2] These menus do not display when the CT, TN5250, or TN3270 emulation is selected.

[3] The factory default value depends on the width of the printer model.

[4] All three Form Width submenus work in conjunction. When you change the default in one submenu, the default values in the other two submenus change automatically.

EPSON FX SETUP



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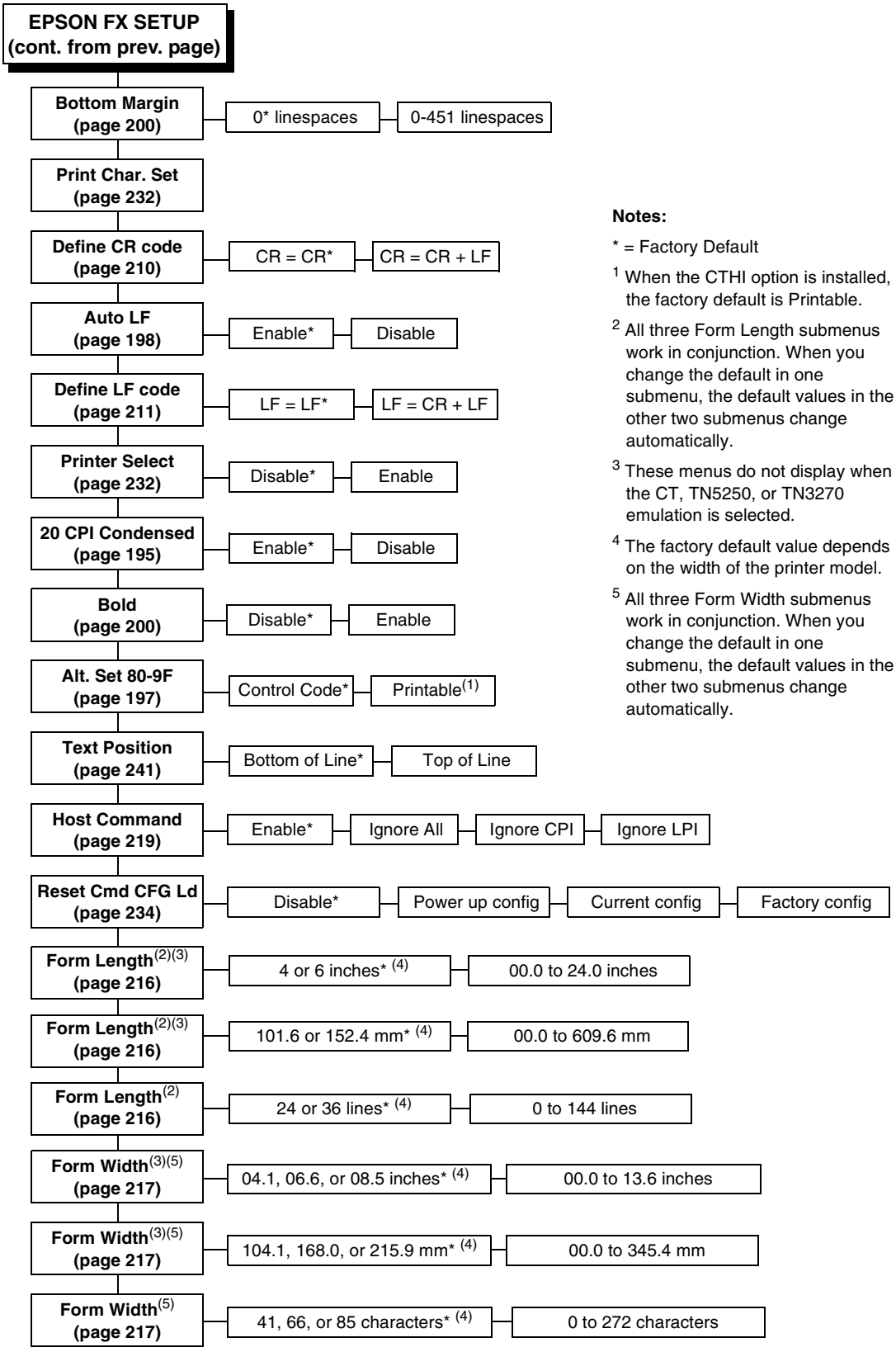
* = Factory Default

[1] These menus are available only when you enable Admin User (under PRINTER CONTROL).

[2] These menus do not display when the CT, TN5250, or TN3270 emulation is selected.



Notes:

* = Factory Default

[1] When the CTHI option is installed, the factory default is Printable.

[2] All three Form Length submenus work in conjunction. When you change the default in one submenu, the default values in the other two submenus change automatically.

[3] These menus do not display when the CT, TN5250, or TN3270 emulation is selected.

[4] The factory default value depends on the width of the printer model.

[5] All three Form Width submenus work in conjunction. When you change the default in one submenu, the default values in the other two submenus change automatically.

Emulation Submenus

NOTE: The following descriptions are grouped together for all emulations and are listed in alphabetical order.

^Dnn Dot Slew

(From page 179.)

- **Low Resolution**. Sets the dot slew command dot values to be interpreted as 60 dpi P-Series dots.
- **High Resolution**. Sets the dot slew command dot values to be interpreted as print engine dots.

The factory default is Low Resolution.

20 CPI Condensed

(From page 192, page 194.) Compressed print characters are narrower than the normal character set. This is helpful for applications where you need to print the maximum amount of information on a page.

- **Enable**. Prints about 60% of the width of normal characters when compressed print is chosen by the host computer.
- **Disable**. Does not compress print widths, even if condensed print is chosen by the host.

The factory default is Enable.

5225 World Trade

(From page 161.) The 5225 emulation has a standard multinational character set that serves as a base and 14 extended world trade character set assortments.

The options are Standard Char (the factory default) and Extended Char.

Absorb After ^PN

(From page 179.)

- **Disable**. The paper motion line terminators that immediately follow the ^PN command are sent to the printer and processed.
- **Enable**. The paper motion line terminators that immediately follow the ^PN command are ignored.

The factory default is Disable.

Absorb After ^PY

(From page 178.)

- **Absorb Motion**. The paper motion line terminator immediately following the graphics ^PY command will be ignored.
- **Absorb All**. The system ignores all the data following ^PY until a host generated terminator is detected and ignored.
- **Disable**. System terminators following a graphics command are sent to the printer and result in paper motion.

The factory default is Absorb Motion.

Active

(From page 183.)

- **Yes**. When enabled, all data is parsed by the PPI2 emulation. Non-PPI2 data is absorbed.
- **No**. When disabled, all data is passed to the LP+ emulation.

For information on setting the LP+ Text Mode through the host data stream, refer to the *PPI2 Programmer's Reference Manual.*

The factory default is Yes.

Active Char Set

(From page 158, page 161, page 170, page 173.) Selects which group of character sets (Primary or Secondary) will be active.

The factory default is Secondary Set.

AI 00 Spaces

(From page 176.) This option is designated for EAN/UCC-128 barcodes whose application identifier (AI) is 00.

- **Disable**. The printable data field is printed with the AI enclosed in parentheses. This is the standard EAN/UCC-128 format.
- **Enable**. The printable data field is printed with the UCC fields separated by spaces. This option is IGP-X00 compatible.

The factory default is Disable.

Alt. Char Set

(From page 192.)

- **Set 1**. Interprets data in the range of hex 80 through hex 9F as a control code.
- **Set 2**. Prints data in the range of hex 80 through hex 9F.

The factory default is Set 1.

Alt. Set 80-9F (P-Series, Serial Matrix, Epson FX)

(From page 185, page 190, page 194.)

- **Control Code**. Interprets data in the range of hex 80 through hex 9F as a control code.
- **Printable**. Prints data in the range of hex 80 through hex 9F.

The factory default is Control Code. However, when the CTHI option is installed, the factory default is Printable.

Alt. Set 80-9F (Coax, Twinax, TN3270, TN5250)

(From page 158, page 161, page 170, page 173.)

- **Printable**. Prints data in the range of hex 80 through hex 9F.
- **Control Code**. Interprets data in the range of hex 80 through hex 9F as a control code.

The factory default is Printable.

Append Rotated

(From page 178.)

- **Disable**. Logos and alphanumeric strings are treated as separate elements.
- **Enable**. Appends logos to an alphanumeric string rotated in a clockwise, counterclockwise, or inverted orientation.

The factory default is Disable.

AR Pre-Feed CMD

(From page 183.) This option allows you to choose whether the engine command for a paper pre-feed (AR) should be processed or ignored. When you select “Ignore,” the paper will not be pre-fed.

The factory default is Process.

Auto FF at ^PN

(From page 179.) When enabled, an FF will be generated automatically to slew to the end of form when the ^PN command is encountered and when the current vertical position is not at the top-of-form.

The options are Disable (the factory default) and Enable.

Auto LF (P-Series, P-Series XQ)

(From page 185, page 187.) This option defines the printer action when print data is received past the forms width setting.

- **Disable**. Discards any data past the forms width.
- **Enable**. Performs an automatic carriage return and line feed when data is received past the forms width.

The factory default is Disable.

Auto LF (Serial Matrix, Proprinter XL, Epson FX)

(From page 190, page 192, page 194.) This option defines the printer action when print data is received past the forms width setting.

- **Enable**. Performs an automatic carriage return and line feed when data is received past the forms width.
- **Disable**. Discards any data past the forms width.

The factory default is Enable.

Auto Skip at End

(From page 159, page 170.) Specifies whether to perform an automatic form feed at the end of a print buffer. If form feed is the last character in the print order, the form feed function is supplied by the Auto Skip At End option.

- **Off**. Sets the printer to print at print position 1 of the next line.
- **On**. Sets the printer to print at print position 1 of the first line of the next form.

The factory default is Off.

Auto Uppercase

(From page 175.) This parameter enables the printer to print text in all uppercase when using the ALPHA command.

- **Disable**. The printer will print text in upper and lowercase.
- **Enable**. The printer will print text in uppercase only.

The factory default is Disable.

Autoeject (PGL)

(From page 176.) If the last page of a job is not full, that is, the data does not fill the entire page, you can instruct the printer to eject the page or to stop and hold the page at the last print position.

- **Disable**. The printer does not eject the last page unless you send a Page Eject command or until the printer receives another print job.
- **Enable**. The printer ejects the last page after the entire job has been processed and printed.

The factory default is Disable.

Autoeject (VGL)

(From page 178.) Determines paper handling upon exiting the VGL Repeated Form and Dynamic Form commands.

- **Disable**. Holds the print position at the bottom of the form.
- **Enable**. Issues a form feed after the last form is printed so all pages will be physically printed.

The factory default is Disable.

Autowrap

(From page 175.) This parameter determines if text will wrap to the next line when the line of text exceeds the right margin.

- **Disable**. Truncates the text beyond the right margin until a CR or CR + LF is received.
- **Enable**. Automatically inserts a CR + LF after a full print line.

The factory default is Disable.

AX Fine Adj. CMD

(From page 183.) This option allows you to choose whether the engine command for a position fine adjust (AX) should be processed or ignored. When you select “Ignore,” the paper will not be fine-adjusted.

The factory default is Process.

AY Intensity CMD

(From page 183.) This option allows you to choose whether the engine command to set the print intensity (AY) should be processed or ignored. If you want to adjust the print intensity through the front panel, use this menu to prevent the host commands from overriding these settings. When you select “Ignore,” the AY command will be ignored and “Print Intensity” as configured in the “MEDIA CONTROL” menu will be used.

The factory default is Process.

Barcode Errors

(From page 179.)

- **Enable**. An error message will print when invalid bar code data is encountered.
- **Disable**. VGL will not print an error for illegal bar code data; the bar code will be skipped.

NOTE: When Barcode Errors is disabled, the VGL emulation will try to make the best use of invalid data by either truncating extra digits or adding zeros to the end of bar code data to meet minimum data length requirements for some bar codes. Not all errors will be corrected.

The factory default is Enable.

Barcode var.

(From page 180.) This command only applies for IBARC barcode command format.

- **Low Resolution**. Sets barcode ratio dot values to be interpreted as line matrix printer dots (60 x72).
- **High Resolution**. Sets barcode ratio dot values to be interpreted as print engine dots (300 x 300 or 203 x 203).

The factory default is Low Resolution.

Bold

(From page 185, page 188, page 190, page 192, page 194.)

- **Disable**. Text is printed normally.
- **Enable**. Text is printed with a heavy line thickness.

The factory default is Disable.

Bottom Margin

(From page 185, page 187, page 189, page 191, page 194.)

Defined in linespaces, starting from line zero at the bottom of the page and incrementing from the bottom up.

The range is 0-451 linespaces, and the factory default is 0 linespaces.

Btm Margin Ctl

(From page 178.) Determines the page's bottom margin. If this option is set to VGL Text Length, then text length changes the bottom margin value in the LP+ Emulation submenu as follows: bottom = physical page length-top margin-text length. If the option is set to LP+ Menu, then a change in text length has no effect, and the bottom margin setting in the LP+ Emulation menu will be used, although the new text length value still shows in the menu.

The options are LP+ Menu (the factory default) and VGL Text Length.

Buffer Print

(From page 158, page 161, page 164, page 165.)

- **Disable**. The printer will print normally.
- **Enable**. The printer prints the EBCDIC data and control codes received from the host as hex values.

NOTE: Use of this parameter may alter print attributes set by the host computer. A power cycle may be required after changing Buffer Print from enable to disable.

The factory default is Disable.

Buffer Reprint

(From page 158, page 164.) This option is valid only when the printer is printing in Coax SCS mode. When the ENTER key is pressed, “Buffer Reprint Enabled” displays and an Intervention Required status is sent to the host. Pressing ENTER again cancels the Buffer Reprint function and displays “Buffer Reprint Disabled” on the LCD.

Cancel IGP/DCU

(From page 159, page 161.)

- **Enable**. Cancels all buffers when a job is put on hold from the host or when the CANCEL key is pressed.
- **Disable**. Does not cancel any internal buffer in the printer when a job is put on hold from the host, or when the CANCEL key is pressed.

The factory default is Enable.

Change Case

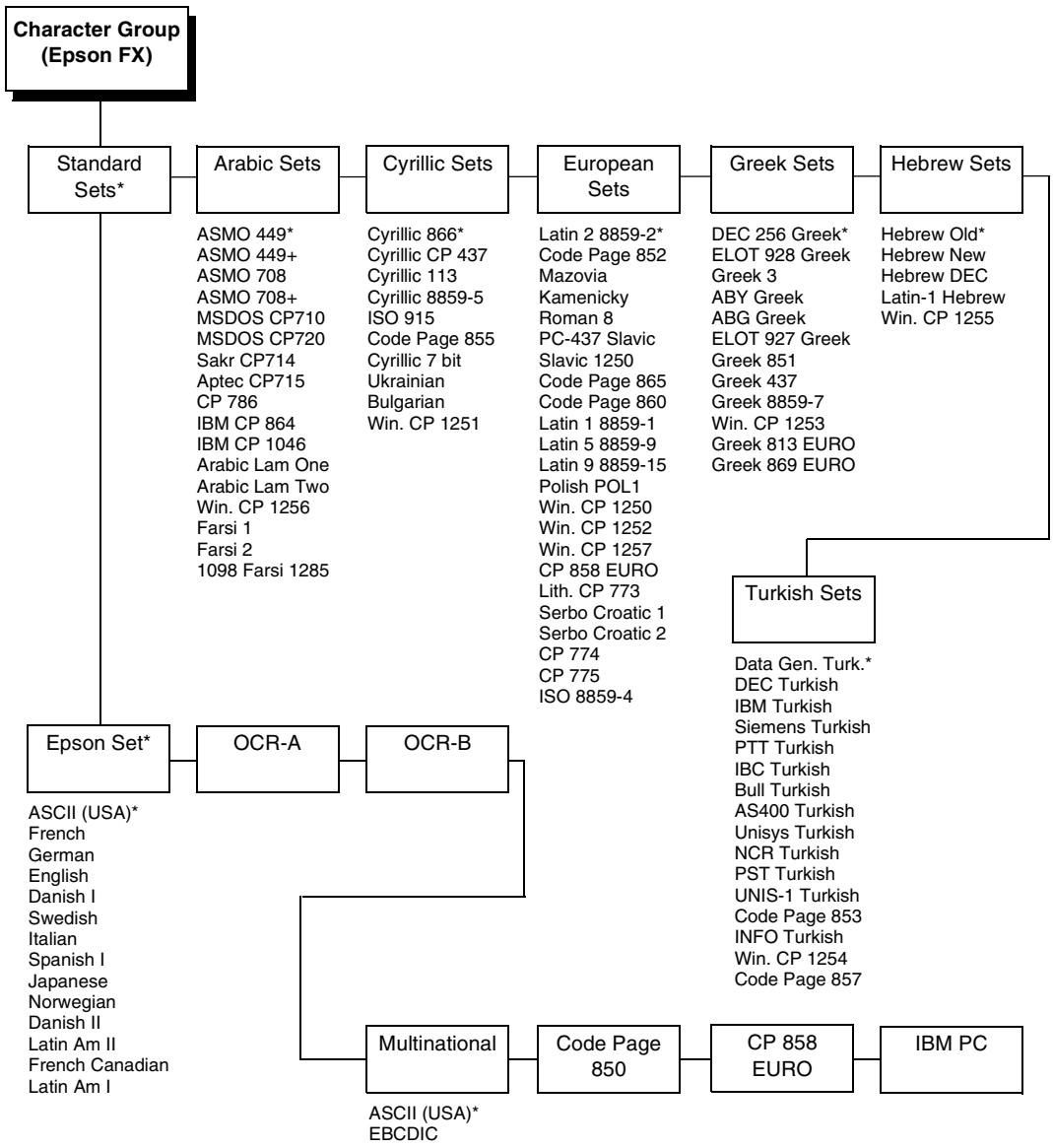
(From page 159, page 171.) Specifies the font as Mono or Dual Case. This option is available only in Coax non-SCS mode. The host will be notified of the change when the printer is put online. Mono Case prints the same as Dual Case if the character set is one of the following “right to left” sets: Katak, Hebrew, Old Hebrew, and Farsi.

SCS (Systems Network Architecture Character String) Mode is controlled by the host computer.

The options are Dual Case (the factory default) and Mono Case.

Character Group and Character Sets (Epson FX)

(From page 193.) This menu item selects the character set used by the printer. The available character sets are shown below.



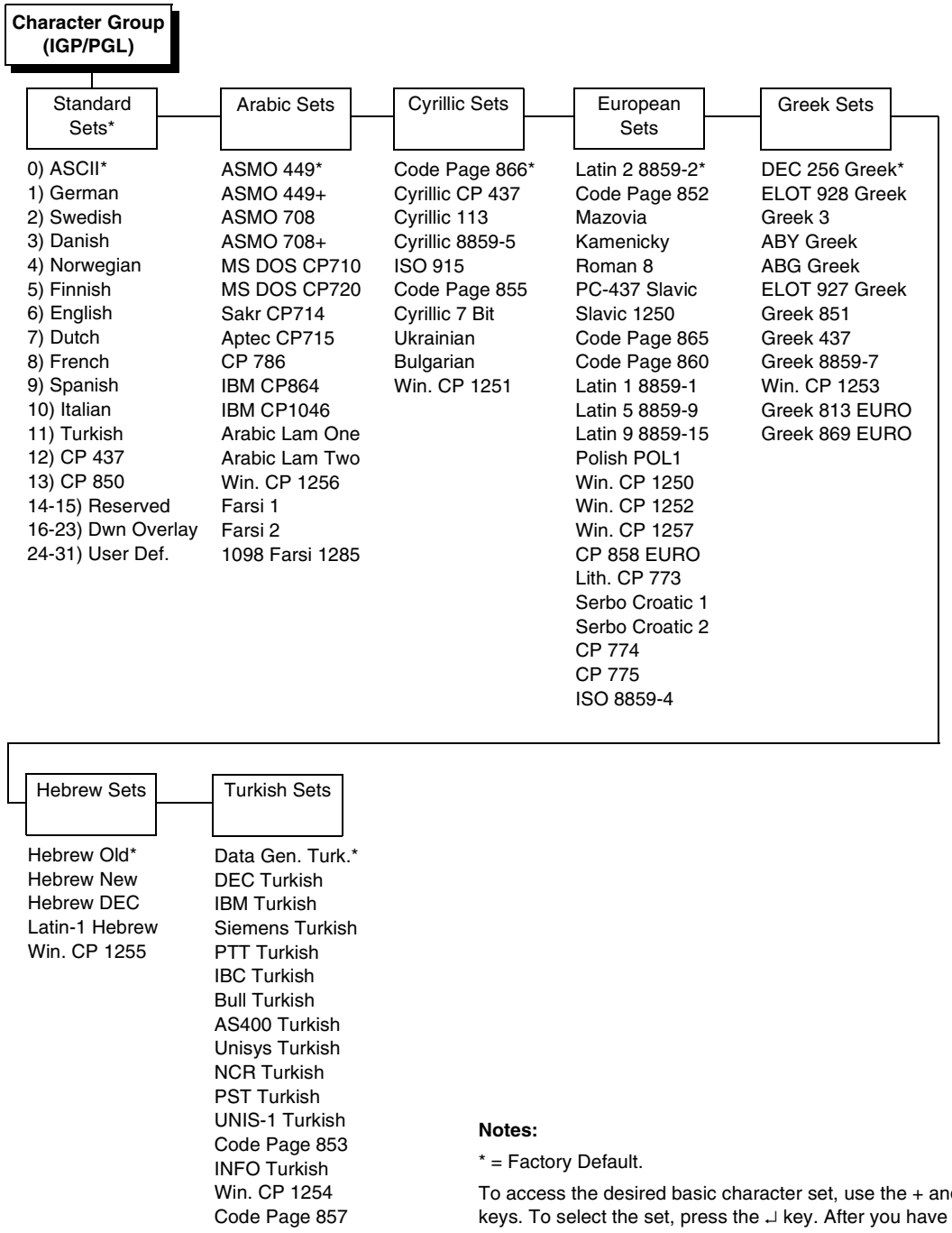
Notes:

* = Factory Default.

To access the desired basic character set, use the + and - keys. To select the set, press the ↵ key. After you have selected the basic set, access the subset selection menu by pressing the ↓ key. Once in the subset menu, access the desired subset by pressing the + and - keys and select it by pressing the ↵ key. The Epson subset is accessed and selected in the same manner.

Character Group and Character Sets (IGP/PGL)

(From page 175.) This menu item selects the character set used by the printer. The available character sets are shown below.



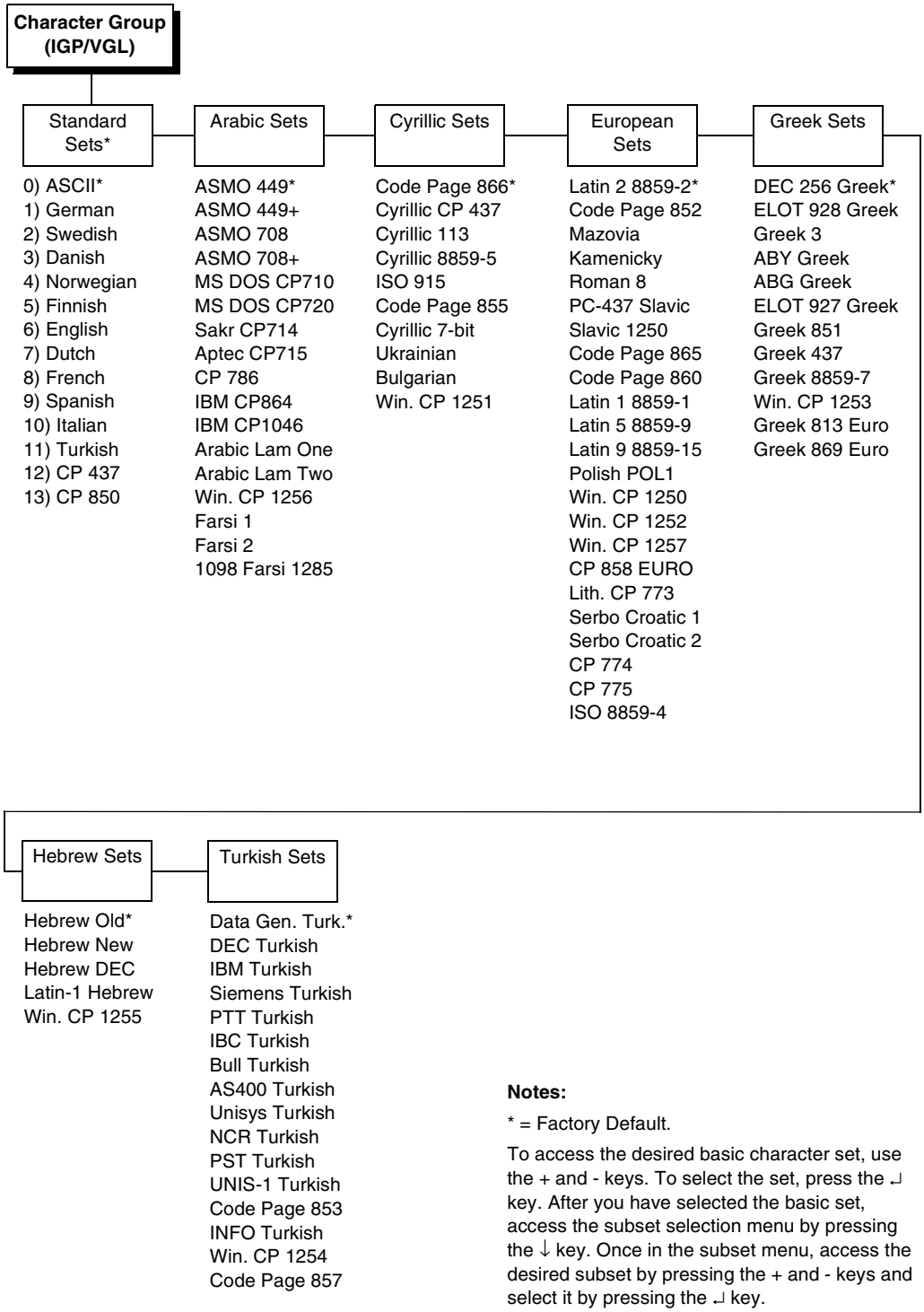
Notes:

* = Factory Default.

To access the desired basic character set, use the + and - keys. To select the set, press the ↵ key. After you have selected the basic set, access the subset selection menu by pressing the ↓ key. Once in the subset menu, access the desired subset by pressing the + and - keys and select it by pressing the ↵ key.

Character Group and Character Sets (IGP/VGL)

(From page 180.) This menu item selects the character set used by the printer. The available character sets are shown below.



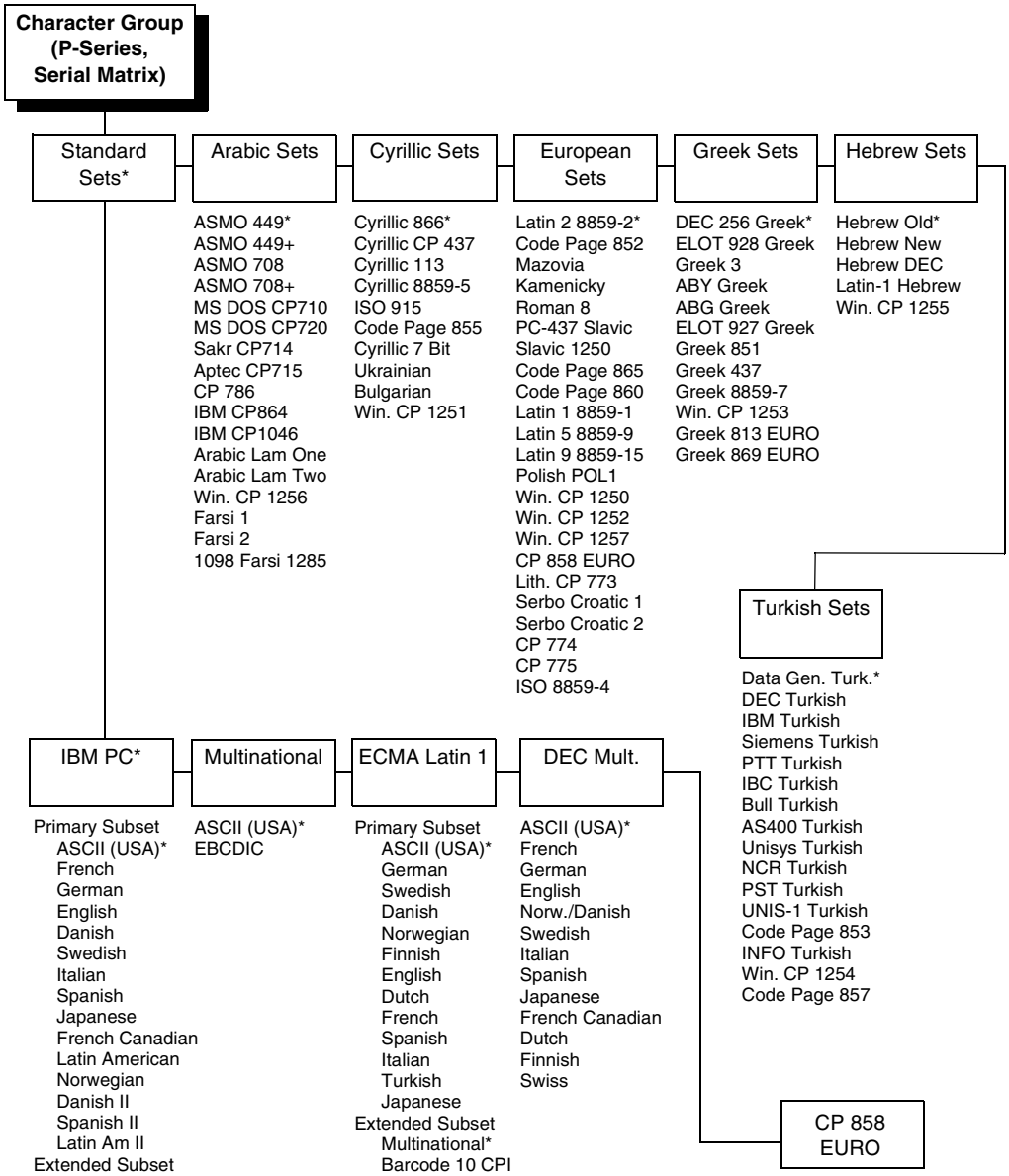
Notes:

* = Factory Default.

To access the desired basic character set, use the + and - keys. To select the set, press the ↵ key. After you have selected the basic set, access the subset selection menu by pressing the ↓ key. Once in the subset menu, access the desired subset by pressing the + and - keys and select it by pressing the ↵ key.

Character Group and Character Sets (P-Series, Serial Matrix)

(From page 184, page 189.) This menu item selects the character set used by the printer. The available character sets are shown below.



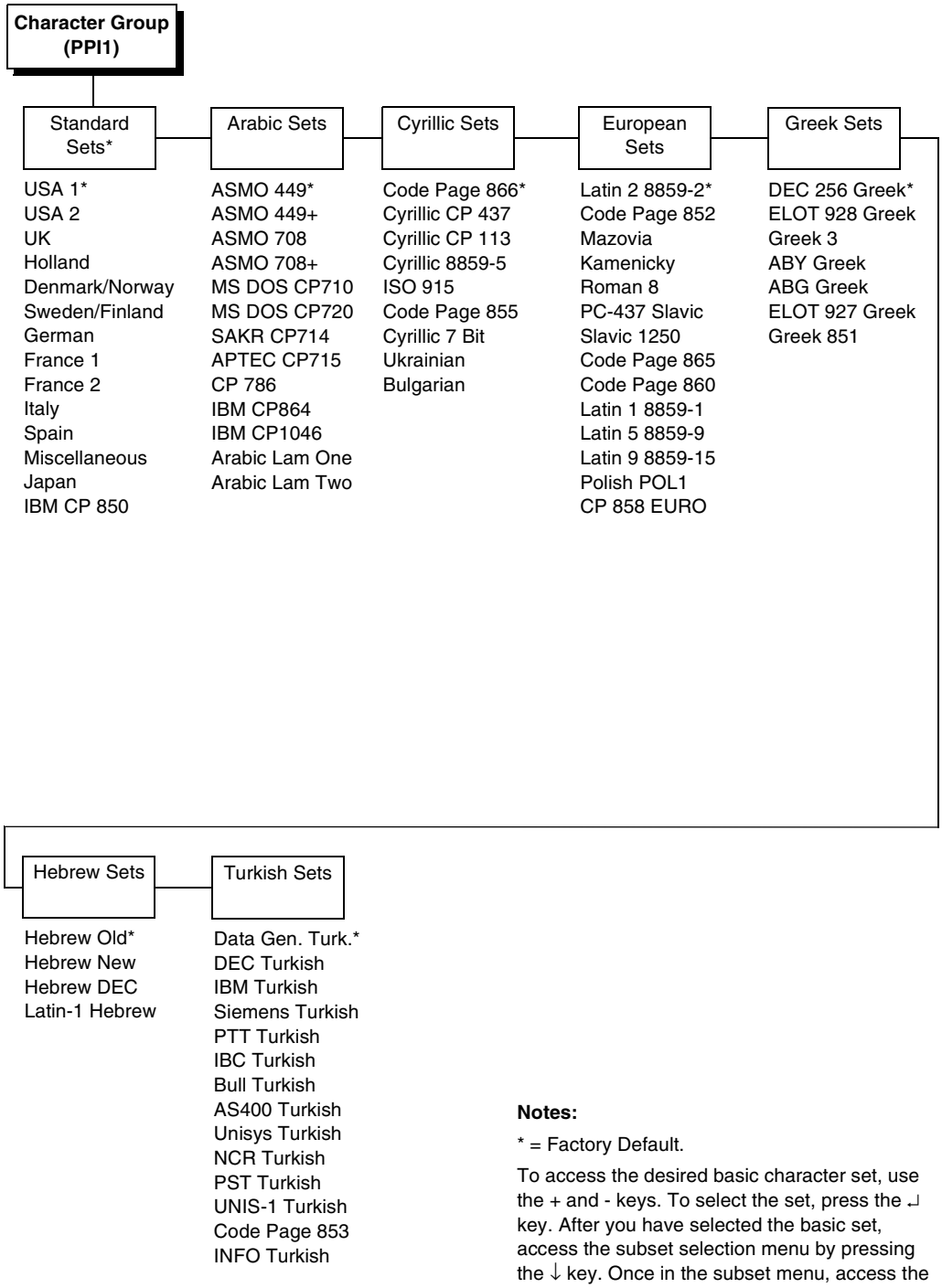
Notes:

* = Factory Default.

To access the desired basic character set, use the + and - keys. To select the set, press the ↵ key. After you have selected the basic set, access the subset selection menu by pressing the ↓ key. Once in the subset menu, access the desired subset by pressing the + and - keys and select it by pressing the ↵ key. Primary and extended character subsets are accessed and selected in the same manner.

Character Group and Character Sets (PPI1)

(From page 182.) This menu item selects the character set used by the printer. The available character sets are shown below.



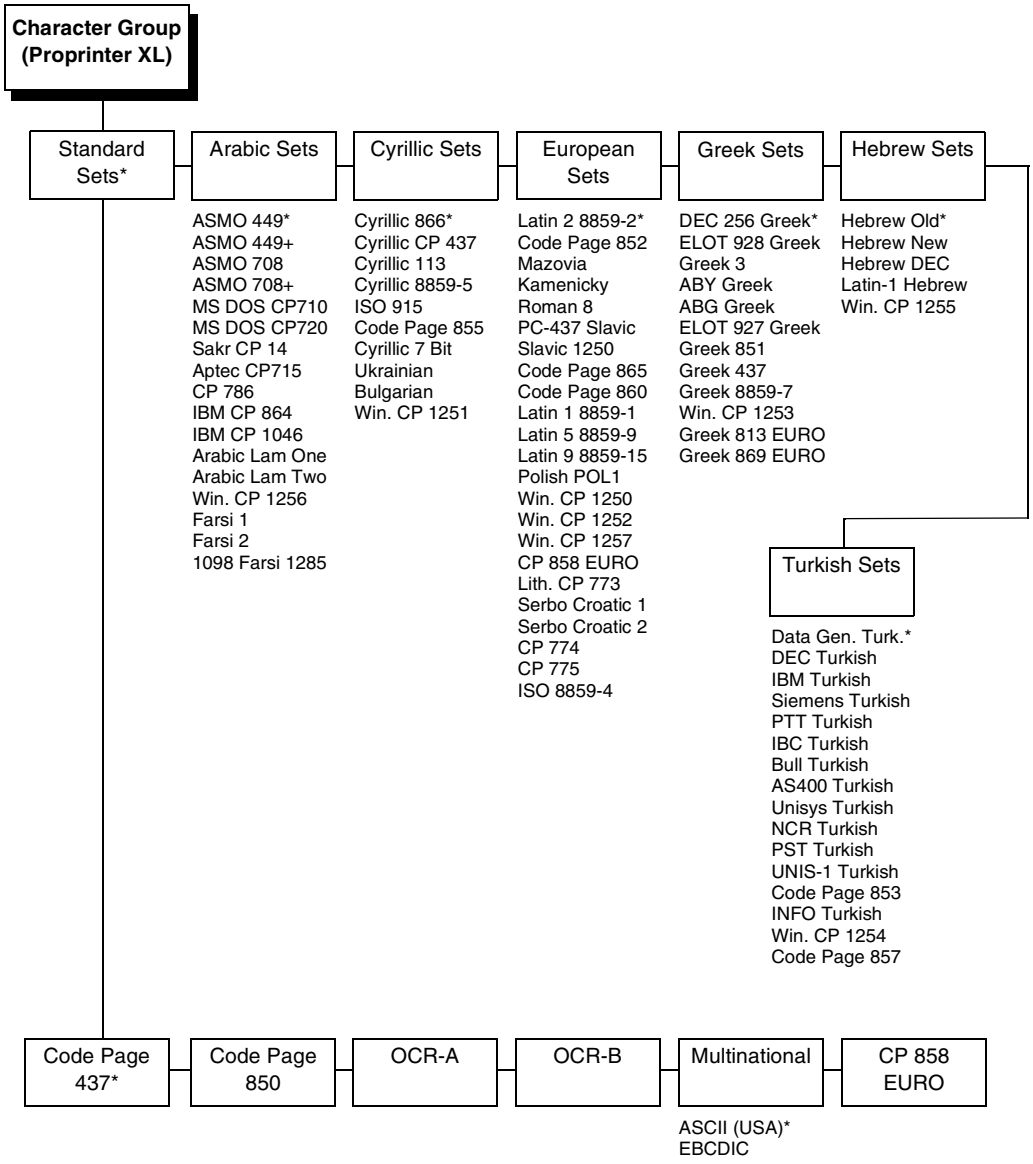
Notes:

* = Factory Default.

To access the desired basic character set, use the + and - keys. To select the set, press the ↵ key. After you have selected the basic set, access the subset selection menu by pressing the ↓ key. Once in the subset menu, access the desired subset by pressing the + and - keys and select it by pressing the ↵ key.

Character Group and Character Sets (Proprinter XL)

(From page 191.) This menu item selects the character set used by the printer. The available character sets are shown below.



Notes:

* = Factory Default.

To access the desired basic character set, use the + and - keys. To select the set, press the ↵ key. After you have selected the basic set, access the subset selection menu by pressing the ↓ key. Once in the subset menu, access the desired subset by pressing the + and - keys and select it by pressing the ↵ key. Character subsets are accessed and selected in the same manner.

Character Set (P-Series, Serial Matrix, Proprinter, Epson FX)

(From page 184, page 189, page 191, page 193.) This item allows selection of the character set to be used by the printer.

Character Set (PPI2)

(From page 183.) Selects the character set: either PC-850 or PC-8.

The factory default is PC-850.

Cmd Resolution

(From page 179.)

- **Low Resolution**. Sets a low command resolution mode.
- **High Resolution**. Sets a high command resolution mode.

The factory default is Low Resolution.

Coax Type

(From page 158.) This parameter defines the printer emulation, as follows:

- 4234
- 3287

After the emulation has been changed, a POR status is sent to the host.

The factory default is 4234.

Code Page Subset

(From page 166.) This item allows you to select the desired version of the following code pages - 037,273, 274, 275, 277, 278, 280, 281, 282, 284, 285, 297, 500, and 871.

The options are Version 0 (the factory default) and Version 1.

Command Prefix

(From page 181.) This item allows you to select the prefix for the control instructions command.

The range is 1-255, and the factory default is 126.

Compressed Print

(From page 188.) Controls which host command sets compressed printing.

- Char 01 SOH
- Char 03 ETX
- Char 09 HT

The factory default is Char 01 SOH.

Control Code 06

(From page 185, page 188, page 190.) Control Code 06 defines the function of ASCII code 06 hex (ACK). You can select an alternate line spacing of 6.0, 8.0, or 10.3 LPI.

The options factory default is 8.0 LPI.

Control Code 08

(From page 185.) Control Code 08 defines the function of ASCII code 08 hex (BS). You can define the code to output an Elongated character or a Backspace. The factory default is Elongated.

Copy Count

(From page 178.) Determines the number of identical copies of each physical page that will be printed.

The range is 1-999, and the factory default is 1.

CR at MPP+1

(From page 158, page 170.) MPP is Maximum Print Position, which is also known as line length. This option controls a carriage return at the end of a print line and at MPP+1.

- **On**. Produces a carriage return to the first print position of the next line.
- **Off**. Produces a carriage return to the first print position of the current line.

The factory default is On.

CR Edit

(From page 175.) This parameter determines if a carriage return will be followed by a line feed.

- **Disable**. The printer ignores all carriage returns that are not followed by line feeds.
- **Enable**. The printer processes all carriage returns, even for those that are not followed by line feeds.

The factory default is Disable.

CR, EM, & NL

(From page 159, page 171.) CR (Carriage Return), EM (Error Message), & NL (New Line) specify that the printer treat the CR, EM, and NL control codes either as spaces or as control codes.

- **On**. Treats the CR, EM, and NL commands as control codes.
- **Off**. Treats the CR, EM, and NL commands as spaces.

The factory default is On.

Data Bit 8

(From page 179.)

- **Enable**. The PI line is not passed directly from host to printer; all 8 bits are used for data bits, and characters in the hex 80-FF range can be accessed.
- **Disable**. When the host PI line is enabled, data bit 8 internally indicates PI line status. To use the PI line, disable data bit 8, and enable the Host PI configuration option (under the PI Ignored option).

NOTE: Data bit 8 is interpreted as either data bit 8 or PI signal, but never both. When enabled as data bit 8, data bit 8 has priority over the PI signal, and all data above hex 7F is used to access character data and not to interpret PI line data.

Conversely, when data bit 8 is disabled and the PI signal is used, data bit 8 of the data is reserved for use as the PI function, and you cannot access characters in the hex 80-FF range. Therefore, to access characters in the hex 80-FF range, data bit 8 must be enabled.

The factory default is Enable.

Default Code Pag

(From page 166.)

This item allows you to select the desired default codepage to be used when IPDS is not activating a Code Page ID. Refer to the *IPDS Programmer's Reference Manual* for a list of the code pages.

The factory default is English/USA/Can.

Default Font

(From page 166.)

This item allows you to select the desired default resident font to be used when IPDS is not activating a Font Global ID. Refer to the *IPDS Programmer's Reference Manual* for a list of the fonts.

The factory default is Courier 10.

Define CR code

(From page 175, page 187, page 190, page 192, page 194.)

This option controls the action of the printer when it receives a Carriage Return code (0D hex) from the host computer. If this feature is enabled, each time the printer receives a carriage return, it inserts an additional Line Feed code (0A hex) into the data stream. Do not use this feature if the host computer sends line feeds to the printer.

NOTE: For this menu to take effect in PGL, PGL Normal needs to be set to PGL Menu (see page 176).

- **CR = CR**. Does not insert an extra line feed after each carriage return.

- **CR = CR + LF**. Inserts an extra line feed after each carriage return. The next print position will be print position 1 of the next line.

The factory default is CR = CR.

Define LF code (PGL, Serial Matrix, Proprinter XL, Epson FX)

(From page 175, page 190, page 192, page 194.) This parameter forces the printer to insert an automatic Carriage Return code into the data stream whenever a Line Feed code occurs. This can be used in most installations, but it is required if the host computer does not send carriage returns to the printer.

NOTE: For this menu to take effect in PGL, PGL Normal needs to be set to PGL Menu (see page 176).

- **LF = LF**. Does not perform an automatic carriage return. The next print position will be at the current print character position on the next line.
- **LF = CR + LF**. Performs an automatic carriage return. The next print position will be print position 1 of the next line.

The factory default is LF = LF.

Define LF code (P-Series, P-Series XQ)

(From page 185, page 187.)

- **LF = CR + LF**. Forces an automatic carriage return with each Line Feed command received. The next print position is position 1 of the next line.
- **LF = LF**. Does not perform an automatic carriage return when a Line Feed command is received. The next print position will be the current print position on the next line.

The factory default is LF = CR + LF.

Delimiter

(From page 181.) This item allows you to select the delimiter used to separate the parameter of a command.

The range is 1-255, and the factory default is 44.

Do FF at TOF

(From page 176.) Determines whether the printer, with media already set at the TOF (Top-of-Form) position, will advance media to the next TOF position upon receipt of an FF command.

- **Enable**. The printer will advance media from the present TOF position to the next TOF position upon receipt of an FF command, causing a blank form.
- **Disable**. The printer will not advance media from the present TOF position to the next TOF position upon receipt of an FF command.

The factory default is Enable.

Early Print Cmpl (Coax, TN3270)

(From page 158, page 170.) Early Print Complete capability allows the printer to send print (order) complete status to the host before the printer is actually done printing all data. This option is valid only when the printer is in DSC/DSE mode.

- **Disable**. The printer will suppress the Early Print Complete response until all printing is complete.
- **Enable**. The printer will send an acknowledgement to the host when it is able to accept more data.

NOTE: When an Early Print Complete is enabled and an error occurs, there may be data loss.

The factory default is Disable.

Early Print Comp (IPDS)

(From page 166.) This parameter allows you to choose when to send a Print Complete to the Controller.

- **Off**. Print Complete is sent if the page is printed completely.
- **On**. Print Complete is sent immediately. The next page will be created. This improves the print performance when starting the next page, but degrades error recovery.

The factory default is Off.

Elong./Alt. Font

(From page 188.) Controls which host command sets elongated (double high) fonts and extended character set.

- ELNG=BS (hex 08) FONT=SO (hex 0E)
- ELNG=SO FONT=BS

The factory default is Elng=BS Font=SO.

Emulation

(From page 166.) This item allows you to select the desired IPDS emulation, either 4028 IPDS or 3816 IPDS.

The factory default is 4028 IPDS.

Epson Set

(From page 193.) This item allows you to select the Epson character subset used by the printer. The options are listed on page 202.

The factory default is ASCII (USA).

Error Markers

(From page 179.)

- **Enable**. Prints the following error markers for those elements that print beyond the page boundaries:

  >> for elements that begin off the right side of the page;

  << for elements that begin at the indicated position but end off the page;

  ♦ for elements where the starting position of the command contains an error other than an off-page error.

- **Disable**.

The factory default is Enable.

Error Msgs

(From page 179.)

- **Enable**. Command syntax is checked and error messages printed when command parameters are incorrect.
- **Disable**. Error checking and error messages are suppressed.

The factory default is Enable.

Error Report

(From page 176.) This item sets the error reporting capability of the printer for PGL forms as follows:

- **On**. Full error checking reported. Any element that falls off the current page is reported as an error.
- **Debug Mode**. Puts the printer in debug mode whenever a form is defined in CREATE mode. Each line of the CREATE form will be printed along with an error if one has occurred.
- **Fault**. Allows you to halt the printer if a PGL error occurs. If you select this option, the PGL error prints on the paper, the message “IGP/PGL Error” displays on the front panel, and the printer goes offline. You must clear the error before the printer can resume normal operation.
- **Off**. There is no error checking whatsoever. Graphic elements such as alpha, line, barcodes, etc. will be clipped if they are beyond the page boundaries.

The factory default is On.

ESC d command

(From page 190.) This item is for backward compatibility.

- **Even dot plot**. This option interprets the ESC d command as even dot plot.
- **Double high**. This option interprets the ESC d command as double high. Select this option for backward compatibility.

The factory default is Even dot plot.

EURO Symbol

(From page 183.) This menu allows you to configure the position of the EURO symbol in the code pages. The default position is 0xB0, but it can be changed to anywhere between 0x20 and 0xFF.

The factory default is 0xB0.

EVFU Select

(From page 185, page 188.) Controls how the printer handles vertical formatting.

- **Enable**. Selects P-Series compatible Electronic Vertical Format Unit (EVFU).
- **Disable**. Disables all EVFU processing.

The factory default is Enable.

Expanded Font (PGL)

(From page 176.) Expanded font allows you to print characters in different sizes with specified parameters and to select which font face to use.

- **Scalable**. Uses scalable fonts.
- **Block**. Uses block fonts.
- **Alt Block 1**. Uses alternative block fonts with a different character set.

The factory default is Scalable.

Expanded Font (VGL)

(From page 179.) Expanded font allows you to print characters in different sizes with specified parameters and allows you to select block or non-block font face.

- **Scalable**. Uses Gothic font as default. Other font faces can be selected by using the IFONT command.
- **Block**. Uses Block font.

The factory default is Scalable.

Expanded Fonts (IPDS)

(From page 166.) This option specifies which algorithm is used for expanding a character string in Write Graphics.

- **Compatible**. A resizing and smoothing algorithm will be performed on the bitmapped font.
- **Scalable**. A substitution will be done to a scalable outline font. Using Scalable will increase performance and quality, however, the substitution will only be done for Latin 1 characters of resident bitmapped fonts, and the type is limited to Courier and Gothic. A scalable font cannot be selected directly, and an LF3 format cannot be downloaded.

The factory default is Scalable.

Ext Execute Copy

(From page 176.)

- **Disable**. Dynamic data, overlay data, etc. are not allowed if the optional Form Count parameter (number of forms to print) is specified as part of the Execute command. (This setting is IGP-100 compatible.)
- **Enable**. Dynamic data, overlay data, etc. are allowed within a form where the Form Count parameter is specified in the Execute command. In this case, the same form is printed for whatever the Form Count is. Incremental data is not incremented since the printing page is the same. The overlay data is only printed with the first form and not on subsequent forms, and each form is printed on a separate page.

The factory default is Disable.

Extended Subset

(From page 184, page 189.) This item allows selection of the desired extended character subset used by the printer.

The options are Code Page 437 (the factory default) and Code Page 850.

FF After Job

(From page 159, page 171.) Determines the print position after an operator-initiated local copy (print screen function).

- **Off**. Performs an automatic new line command after completing a print buffer (unless a new line, form feed, or carriage return command was the last one executed). The printer is set to print at print position 1 of the next line.
- **On**. Performs an automatic form feed command unless a form feed was the last one executed. The printer is set to print at print position 1 of the first line on the next form.

The factory default is Off.

FF valid at TOF

(From page 185, page 192.) The FF valid at TOF option determines whether the printer will perform a Form Feed when the host sends a Form Feed command, if the printer is at the top of form.

- **Enable**. Performs a form feed when the host sends a Form Feed command and the printer is at the top of form.
- **Disable**. Will not perform a form feed when the host sends a Form Feed command and the printer is at the top of form.

The factory default is Enable.

FF Validity

(From page 159, page 170.) Determines if the position of a Form Feed (FF) command affects its execution.

- **Off**. Performs a form feed only if it occurs at the first print position in a line or at Maximum Print Position +1. An FF command at any other position is recognized as a blank.
- **On**. Allows the printer to perform an FF command anywhere in the data stream.

The factory default is Off.

Form Length (in.)

(From page 186, page 188, page 190, page 192, page 194.)

Form length is the number of lines that can be printed on a label. You can set forms length in inches.

The factory default is shown in Table 3 on page 122.

Form Length (lines)

(From page 186, page 188, page 190, page 192, page 194.)

Form length is the number of lines that can be printed on a label. You can set forms length as a function of the current LPI (lines per inch).

The factory default is shown in Table 3 on page 122.

Form Length (mm)

(From page 186, page 188, page 190, page 192, page 194.)

Form length is the number of lines that can be printed on a label. You can set forms length in millimeters.

The factory default is shown in Table 3 on page 122.

Form Width (char.)

(From page 186, page 188, page 190, page 192, page 194.)

The forms width can be specified as a function of the current CPI (characters per inch). The forms width set should not exceed the actual paper width.

The factory default is the maximum printing width divided by the selected number of characters per inch.

Form Width (in.)

(From page 186, page 188, page 190, page 192, page 194.)

In this submenu, form width is specified in inches. The form width set should not exceed the actual paper width.

The factory default is the maximum printing width.

Form Width (mm.)

(From page 186, page 188, page 190, page 192, page 194.)

In this submenu, form width is specified in millimeters. The form width set should not exceed the actual paper width.

The factory default is the maximum printing width.

Format Control

(From page 159, page 161, page 171, page 173.) Enables the printer to reflect the same spacing as CTPC model printers after absolute and relative move commands are executed.

- **Disable**. Reflects distance, generated by the VGL feature, PGL feature, and Hex Transparent control code sequence, in the new position (after horizontal and vertical tabs are executed).
- **Enable**. Does not reflect distance, generated by the VGL feature, PGL feature, and Hex Transparent control code sequence, in the new position (after horizontal and vertical tabs are executed).

The factory default is Disable.

Gothic Typeface

(From page 188.) Controls which host command sets high speed printing.

- Char 02 STX
- Char 03 ETX
- Char 09 HT

The factory default is Char 02 STX.

Graphic Chek Cod

(From page 161, page 173.) Specifies the replacement character to print in place of any unprintable character that is received from the host. Choose a hex character from 40 through FE. The character becomes the printer default when:

- The printer is powered off and then powered on.
- An SGEA command specifies to use the operator panel default.
- The Graphic Chek Err parameter is disabled.

The range is 40 through F4, and the factory default is 60.

Graphic Chek Err

(From page 161, page 173.) Allows overriding of the host setting for the SGEA (Set Graphic Error Action) command. For more information about the SGEA command, refer to the *Coax/Twinax Programmer's Reference Manual*.

- **Enable**. The host setting for the SGEA used by the printer. If the SGEA command is requested to stop on graphic errors, the printer will stop when a graphic error is detected.
- **Disable**. Ignores the SGEA command from the host. The printer does not stop when an error is detected; instead, it substitutes the character selected in the Graphic Chek Code parameter.

The factory default is Enable.

Hexdump Mode

(From page 166.) Hexdump mode allows you to place the printer into the “hex dump” mode, in which the printer outputs a hexadecimal data stream. The purpose of hexdump mode is to see exactly what data is received by the printer, in order to debug forms, for example.

When enabled, the hexdump mode translates all host interface data to its hexadecimal equivalent, then prints the hex code and its printable symbol, if one exists. Figure 6 shows a partial example of a hex dump.

After the printer enters hexdump mode, all characters it prints (including any in the printer's input buffer) are printed in two forms: as a two-symbol hexadecimal code and as the character's printable symbol (if it has one). A non-printable code is printed as a period [.] symbol. Up to 16 characters can be printed per line of hexdump printout. While the printer is in hexdump mode, it does not act upon any control codes, other than to print their hexadecimal equivalents.

The 16 characters printed per line on the hexdump are formatted so that the 16 printable symbols are printed in columns 1 through 16. The 17th column is blank. Column 18 contains either a p (PI line active) or a blank (PI not active). Columns 19 and 20 contain the hexadecimal code for the first character, followed by a blank. The PI line condition and hexadecimal code for the second character are printed in columns 22, 23, and 24, followed by a blank. The third through 16th characters are printed in a similar manner. The hexadecimal code for the 16th character is printed in columns 78, 79, and 80.

NOTE: Values will vary based on printhead width.

Subsequent printing observes the current setting for skip-over perforation, form length, and top-of-form position parameters.

IMPORTANT **You must have a minimum of 4.1 inches of media installed and have Label Width set to 4.1 inches. If not, the hexdump data will be truncated and lost.**

If a fault occurs while printing a hexdump, the printer reverts to the normal fault state. When the fault is cleared, the printer resumes printing the hexdump (either a partial line with a form feed or nothing at all). Top-of-Form remains unaffected.

```
.The Impact Prin  09 54 68 65 20 49 6D 70 61 63 74 20 50 72 69 6E
ter Emulation pr  74 65 72 20 45 6D 75 6C 61 74 69 6F 6E 20 70 72
ints in one-up,.  69 6E 74 73 20 69 6E 20 6F 6E 65 2D 75 70 2C 0A
.two-up, and fou  09 74 77 6F 2D 75 70 2C 20 61 6E 64 20 66 6F 75
r up page window  72 20 75 70 20 70 61 67 65 20 77 69 6E 64 6F 77
s....             73 2E 0C 0D 0A
```

Figure 6. Sample Hex Dump

To begin a hex dump, first place the printer offline and enable the Hex Dump Mode option from the control panel. Next, place the printer online. Finally, send data to the printer from the host computer. Any data received from the host is “dumped” to the printout.

To cancel a hex dump, first place the printer offline. Then, disable the Hex Dump Mode option from the control panel. The paper may then be advanced to the next Top-of-Form.

The options are Disable (the factory default) and Enable.

Horizontal DPI

(From page 184, page 187, page 189, page 191, page 193.)

This feature enables the thermal printer to print images as close as possible to the same size as those originally programmed for a line matrix or laser printer by selecting a horizontal resolution that matches that of the printer that the file was originally generated for.

Although the range allows a selection of up to 400 dpi, the T5000 is capable of printing up to 203 dpi (T5204, T5206, T5208) and 300 dpi (T5304, T5306, T5308) horizontal resolution.

The range is 60-400 dpi, and the factory default is 120 dpi.

Host Command

(From page 186, page 188, page 190, page 192, page 194.)

This item allows you to select certain host commands to be ignored by the printer.

The options are Enable, Ignore All, Ignore CPI, and Ignore LPI.

The factory default is Enable (all host commands accepted by the printer).

Host Form Length (PGL)

(From page 175.) Determines how the physical label length (see Label Length under the MEDIA CONTROL menu) is affected upon receiving an EXECUTE command.

- **Enable**. The physical label length will change to match the form length (specified in CREATE command). The physical label size remains at the new setting until another EXECUTE command is received, or the PRINTER CONTROL menu settings are changed.
- **Var. Length**. The physical label length is the longest print element plus the setting of “Var Form Adjust.”
- **Var Dynamic Len**. The physical label length will change to the longest print element defined in CREATE mode plus the setting of “Var Form Adjust.”
- **Disable**. Forms printed in EXECUTE mode do not change the physical label size. Therefore, the size of the form (defined in CREATE mode) must fit within the current label dimensions, or errors may occur.

NOTE: Changing the form length via the EXECUTE command changes the LP+ Emulation logical dimensions.

The factory default is Enable.

Host Form Length (IPDS)

(From page 166.) Enables or disables changing the form length by the host.

- **Disable.** The host is unable to change the form length.
- **Enable.** The host may change the form length.

The factory default is Disable.

Host Form Length (PPI1)

(From page 181.)

Selects whether the Label Length set in the menu or sent by the host software command is used.

- **Enable.** Label length will be determined by the ^LL command if it is present. If the ^LL command is not present, it will be based on the Label Length value in the QUICK SETUP or MEDIA CONTROL menu.
- **Disable.** Label length will be determined by the Label Length value in the QUICK SETUP or MEDIA CONTROL menu.

The factory default is Enable.

Host Form Length (VGL)

(From page 178.) Sets the printer page size.

- **Enable**. Sets the printer label size equal to Label Length from the host form length command. (For more information, refer to the *IGP/VGL Programmer's Reference Manual*.)
- **Disable**. Sets the printer label size equal to the Label Length set in the front panel under the PRINTER CONTROL menu.

The factory default is Enable.

Host Override

(From page 159, page 161, page 171, page 173.) Determines whether the printer accepts certain commands sent by the host, or continues to use the current operator panel settings.

- **Disable**. Allows these host commands to override operator panel settings: line length, forms length, lines per inch (LPI), characters per inch (CPI), print quality, and text orientation. Note the information appearing on the message display may not match the data stream setting. No values will change upon initial selection of the Disable option.
- **Enable**. The operator panel settings override the host commands.

The factory default is Disable.

Host PI

(From page 180.)

- **Disable**. The host does not send PI signals.
- **Enable**. The host sends PI signals. The Data Bit 8 configuration option must be disabled to transmit the PI line to the printer.

The factory default is Disable.

I-2/5 Selection

(From page 176.) This option is added to be compatible with a special IGP-X00 customization. Usually, if Interleaved 2/5 bar codes have an odd number of digits, a leading zero is inserted in front of the data. However, this special IGP-X00 customization gives you the option of adding a space character at the end of the bar code instead.

- **Leading Zero**. A leading zero is inserted in front of the data.
- **Trailing Space**. A space is inserted at the end of the data instead of a leading zero.
- **X2 DPD**. When selected, I-2/5 bar code with a magnification X2 will use the specially configured ratios 3:3:6:5 rather than 3:6:9:12 for compatibility issues.
- **Modulo 7 CD**. The I-2/5 bar code uses a modulo 7 check digit instead of the default modulo 10 check digit.

The factory default is Leading Zero.

Ignore Ch#1

(From page 179.) Specifies character 1 for the character filtering option. Valid decimal values are from 0 through 255.

The factory default is 0.

Ignore Ch#2

(From page 179.) Specifies character 2 for the character filtering option. Valid decimal values are from 0 through 255.

The factory default is 0.

Ignore Chars

(From page 179.)

- **Disable**. Character filtering is not enabled.
- **Char 1**. Character 1 will be filtered. Select the option “Ignore ch#1” to specify character 1.
- **Char 2**. Character 2 will be filtered. Select the option “Ignore ch#2” to specify character 2.
- **Char 1&2**. Characters 1 & 2 will be filtered. Select the options “Ignore ch#1” and “Ignore ch#2” to specify values for these characters.

The factory default is Disable.

Ignore Dots

(From page 178.)

- **Disable**. The VGL expects position values to be specified in tenth inches and dot rows.
- **Enable**. Causes the VGL to expect position values to be specified in only 1/10ths of an inch. If the dot position is also given, it is treated as text.

The factory default is Disable.

Ignore ^Lxx Cmd.

(From page 179.)

- **Disable**. The factory default.
- **Enable**. The Form Length commands ^Lxx and ^Hxx will be ignored, and the form length will be determined by the “Form Length” menu in the LP+ menu.

The factory default is Disable.

Ignore Mode

(From page 176.) This parameter instructs the IGP to ignore the character selected under the Select Character menu.

- **Disable.** The IGP does not ignore any characters.
- **Enable.** The IGP ignores the character specified in the Select Character menu.

The factory default is Disable.

Ignore Spaces

(From page 179.)

- **Disable**. Trailing spaces are not deleted from alphanumeric elements in a graphics pass.
- **Enable**. Trailing spaces are deleted from alphanumeric elements in a graphics pass.

The factory default is Disable.

Ignore Text

(From page 176.)

- **Disable**. When disabled, text in normal mode will be printed. Attributes to be printed depend on the PGL Normal menu setting.
- **Enable**. When enabled, any line of text (non-PGL commands) in normal mode will be ignored.

The factory default is Disable.

IGP100 Compatibl.

(From page 176.) This parameter forces the output to correspond with IGP-100 printer output in cases where there are differences.

The options are Disable (the factory default) and Enable.

Image Scale

(From page 183.)

- **Enable**. When enabled, images are scaled from TEC printer resolution (306 dpi) to the resolution of the PPI2 printer (300 dpi).
- **Disable**. If disabled, scaling will not take place, resulting in images that are 2% larger than images printed on the TEC printer. Printing is faster though, and the image keeps the right proportions.

The factory default is Disable.

Intervention Req

(From page 158, page 164, page 170.)

- **Send To Host**. The printer sends a signal to the host computer when a printer fault or hold mode time-out occurs.

NOTE: If you select Send To Host, make sure the Error Recover option (under MEDIA CONTROL) is set to Disable. If Error Recover is not set to Disable, Intervention Req will not work properly.

- **Do Not Send**. No signal will be sent to the host computer.

The factory default is Send To Host.

IS Label Fmt

(From page 182.) The ^IS command saves the printed label image by name for later recall as part of a label definition. The IS Label Fmt option determines the internal format to be used for storing the label image: list format or bit format.

- **List Format.** Should be used for most applications due to its greater efficiency of data process.
- **Bitmap Format.** Should be used in applications that frequently recall the saved label image, in which case the bitmap storage format provides the better print speed.

The factory default is List Format.

Italic Print

(From page 184, page 187, page 189, page 191, page 193.)

- **Disable**. Text is printed normally.
- **Forward Slant**. Text is printed with a forward slant.
- **Backward Slant**. Text is printed with a backward slant.

The factory default is Disable.

Label Buf Size

(From page 181.)

This option allows you to set the label buffer size.

The buffer is used to store the data from ^XA up to ^XZ for command processing. The maximum size of the buffer cannot exceed the amount of available memory in the system. If a menu value is selected which is greater than the amount of memory available, the menu value will be set to the amount available. To increase the amount of available memory, increase the Glob Mem Adjust setting (under the PRINTER CONTROL menu).

Also, the new buffer size only takes effect upon power-up, so do a Save Config. for the new setting and select that config as the Power-up.

The range is 160K Bytes to 3600K Bytes, and the factory default is 560K Bytes.

Label Prefix

(From page 181.) This item allows you to select the prefix for the format instructions command.

The range is 1-255, and the factory default is 94.

LAC Approx.

(From page 161.) This item controls whether or not the LAC Approximation is used. (See the *Coax/Twinax Programmer's Reference Manual*.)

When set to On, then Approximation is used. When set to Off, Approximation is not used, and incoming data will print as is. The factory default is On.

LAC Option

(From page 161.) Allows the host system to load alternate character images into the printer. This may be used for designing graphics, bar codes, and charts, or for printing in foreign languages.

- **Enable**. Prints the LAC character as defined.
- **Disable**. Ignores the LAC definition from the host and prints from the currently selected character set.

The factory default is Enable.

Last Char = FF

(From page 159, page 170.) Determines the print line position when a Form Feed (FF) command is the last code encountered in the print buffer.

- **On**. Moves to the first print position on the second line of the next form.
- **Off**. Moves to the first print position on the first line of the next form.

NOTE: This option is ignored if Auto Skip At End is on.

If configured as a 3287, and a form feed occurs in the middle of a print buffer, the printer defaults to the first print position on the second line of the next form, regardless of the setting of this option.

The factory default is On.

Lead PDF Dist

(From page 177.) Adjusts the leading and trailing character spacing distance of the PDF for UPC/EAN barcodes.

The range is 0.01- 0.10 inches in 0.01 inch increments, and the factory default is 0.10 inches.

Lead-in Chars

(From page 159, page 161, page 171, page 173.) You can enable additional printer features which are not accessible through standard coax emulations. To access these features, send text commands in the data stream. The commands must have a start and end code. Three sets (each containing a start and end code) are available:

- **Set 1** start code: <%
  end code: >
- **Set 2** start code:¬¬
  end code: $
- **Set 3** start code: _%
  end code: _

The factory default is Set 1<%>.

Left Margin

(From page 184, page 187, page 189, page 191, page 193.)

Set in characters. Character zero is defined as the far left edge of the page, and column numbering increments from left to right.

The range is 0-369 characters, and the factory default is 0 characters.

Left Position

(From page 181.) The ^LS command specifies a horizontal offset to be added to all label element positions. The Left Position option displays the value specified by the ^LS command and provides an alternative method for specifying the horizontal offset.

The factory default is 0.

Logical Buf Size

(From page 164.) Refers to the size of the printer buffer, which should be set the same as the host screen (buffer) size. If the host screen size is unknown, use 1920.

The options are 960, 1920, 2560, 3440, and 3564.
The factory default is 1920.

LP+ Text Mode

(From page 181.) PPI supports text printing using the LP+ emulation.

- **Absorb.** Use this setting for ZPL compatibility. This setting absorbs non-PPI data.
- **Auto Pass-thru.** Use this setting for text printing. Non-PPI data is passed to the LP+ emulation.

- **PPI1 Quiet.** All data and PPI commands are passed to the LP+ emulation.

For information on setting the LP+ Text Mode through the host data stream, refer to the *PPI1 Programmer's Reference Manual*.

The factory default is Absorb.

LPI

(From page 178.) This item selects the number of lines printed per inch.

The range is 6-10, and the factory default is 6.

Max PI 16

(From page 180.)

- **Enable**. A paper slew of 0-15 will move 1-16 lines.
- **Disable**. A paper slew of 1-15 will move 1-15 lines. A paper slew of 0 will always move 1 line.

The factory default is Enable.

Max. Print Width

(From page 159, page 161, page 171, page 173.) Set the maximum print width the printer will print when using a C/T or TN5250 host interface. Set for 13.2 inches when printing files larger than the width of the printer. All data exceeding the width of the maximum Printer Width will be truncated.

- 13.2 inches
- Printer Width (the maximum width of the printer)

The factory default is 13.2 inches.

MC Label Fmt

(From page 181.) The ^MC command determines whether the printed label image should be retained for use in the immediately following label definition. The MC Label Fmt option determines the internal format to be used for storing the label image: list format or bitmap format.

- **List format.** Works for most applications and should be used for applications where memory is sufficient.
- **Bitmap format.** Should be used in applications where a large amount of data is sent. Bitmap format has greater efficiency of memory use. The label image of the next label is overlaid on the bitmap of the current label (instead of accumulating a list of stored print elements like List Format, which might eventually run out of memory in a large print job).

The factory default is List Format.

Midline PY (includes ^PN)

(From page 179.)

- **Disable**. The Graphics mode Enabled command, ^PY, must be the first three characters of a line.
- **Enable**. The ^PY or ^PN can occur anywhere in a line.

The factory default is Disable.

NL at MPP+1

(From page 158, page 164, page 170.) Specifies the linespacing action when the printline exceeds the rightmost print position and text continues from the leftmost print position on a new line.

- **On**. Moves to the first print position two lines down from the current position.
- **Off**. Moves to the first print position of the next print line.

The factory default is On.

Null Handling

(From page 164.) This item allows the printer to either treat nulls as blank spaces or ignore them. If nulls are ignored, the print position does not move.

- **Space**. Treats nulls as spaces.
- **Ignore**. Ignores nulls.

The factory default is Space.

Null Suppression (Coax, TN3270)

(From page 159, page 170.) This item allows the printer to either treat nulls as blank spaces or ignore them. If nulls are ignored, the print position does not move.

- **Off**. Ignores nulls.
- **On**. Treats nulls as spaces.

The factory default is Off.

Null Suppression (IPDS)

(From page 166.)

- **Disable**. When disabled, an exception is generated when the IPDS data stream contains an 0x00.
- **Enable**. When enabled, this option ignores the EBCDIC value 0x00 in the IPDS data stream.

The factory default is Disable.

Offpage Errors

(From page 179.)

- **Disable**. Does not report errors for elements that start or end beyond the right edge of the page.
- **Enable**. Reports errors for elements that start or end beyond the right edge of the page.

The factory default is Disable.

Optimized Ratio

(From page 175.) This option selects different bar code ratios for certain bar codes including Code 39 and Interleaved 2 of 5. It is included for compatibility with the IGP-X00 printers.

- **Disable**. Use standard bar code ratios.
- **Enable**. Select the alternate bar code ratios.

The factory default is Disable.

Overstrike

(From page 185, page 190.) Overstrike determines the action required when a line is printed over a previous line because a carriage return was received without a line feed.

- **Enable**. Prints the second line on top of the first line.
- **Disable**. Replaces the characters from the first line with the second line.

The factory default is Enable.

PA1

(From page 158, page 164.) PA1 is only valid when the printer is in the offline state and the coax Systems Network Architecture Character Set (SCS) data stream is active. This function displays the “PA1 ENABLED” message when the ENTER key is pressed, and sends a special operator request to the host when the printer is put back online. Refer to the *Coax/Twinax Programmer's Reference Manual* for more information about SCS.

NOTE: Selecting PA1 again (“PA1 DISABLED” appears on the operator panel) or selecting PA2 will reset the pending PA1 function.

PA2

(From page 158, page 164.) PA2 is only valid when the printer is offline and the coax SCS data stream is active. This function displays the “PA2 ENABLED” message when the ↵ key is pressed, and sends a special operator request to the host when the printer is put back online.

NOTE: Selecting PA2 again (“PA2 DISABLED” appears on the operator panel) or selecting PA1 will reset the pending PA2 function.

Page Rotation

(From page 166.) This option rotates the physical IPDS page.

The options are 0, 90, 180, and 270.

The factory default is 0.

PGL Normal

(From page 176.) This option determines whether PGL passes the text data in Normal mode according to LP+ or whether PGL will print the text data itself.

- **LP+ Menu**. PGL will pass the text data to LP+ only in the default setting state (6 LPI, default character set, and font attribute).
- **PGL Menu**. PGL will always print the text data itself.

The factory default is LP+ Menu.

PI Slew Range

(From page 175.) You can specify how many lines the paper will feed.

- **15**. A paper slew of 1-15 will move 1-15 lines. A paper slew of 0 will move 1 line.
- **16**. A paper slew of 0-15 will move 1-16 lines.

The factory default is 16.

Position Aft FF

(From page 158, page 170.) Allows you to select the location of the print position after a Form Feed command is sent.

- **Off**. Sets the printer to print at position 2 of the first print line on the next form.
- **On**. Sets the printer to print at print position 1 of the first print line on the next form.

The factory default is Off.

Power on IGP/PGL

(From page 176.) You can set the IGP/PGL feature so that it is enabled or disabled when the printer is powered on.

- **Enable**. The IGP/PGL is enabled when the printer is powered on. (The IGP/PGL feature is initialized in the Normal mode.)
- **Disable**. The IGP/PGL is disabled when the printer is powered on. (The IGP/PGL feature is initialized to the Quiet mode.)

The factory default is Enable.

Power-up ^F

(From page 178.)

- **Disable**.
- **Enable**. Selects free format mode as the power-up default, and selects the graphics mode ^PY as the power-up default. Free format causes the VGL to ignore carriage returns, line feeds, and all characters below 20 hex sent from the host.

The factory default is Disable.

Power-up ^PY

(From page 178.)

- **Disable**.
- **Enable**. Selects the graphics mode ^PY as the power-up default.

The factory default is Disable.

Power-up ^X

(From page 178.)

- **Disable**.
- **Enable**. Selects the ignore mode as the power-up default, and selects the graphics mode ^PY as the power-up default. All characters are ignored until a ^A command is received.

The factory default is Disable.

PQ Label Fmt

(From page 181.) Allows selection of two methods of using Print Quantity Label Formats (^PQ) for printing a label from memory.

- **List Format**. A list of all stored print elements (graphics, text, and barcodes) is reprocessed and executed again for each label. Works for most applications.
- **Bitmap Format**. The bitmap of the first label is stored and copied over for each label printed without reprocessing a list of all print elements. Should be used in applications that print labels of the same data only, as it provides better print speed.

The factory default is List Format.

Preparser Command

(From page 181.) The incoming data will be checked for the string “HS” or “JA” prior to entering the PPI1 emulation parser based on the HS Command or the JA Command. Once the string is detected, the command will take effect immediately.

The factory default is HS Command.

Preparser Port

(From page 181.)

- **Disable.** Disables the Preparser Command feature.
- **Parallel.** Select Parallel if the data is coming to the printer through the parallel port.
- **Serial.** Select Serial if the data is coming to the printer through the serial port.

The factory default is Disable.

Primary Subset

(From page 184, page 189.) This item allows selection of the desired primary character subset used by the printer. The factory default is ASCII (USA).

Print Char. Set

(From page 185, page 187, page 189, page 191, page 194.)

Selecting this item by pressing the ↵ key causes the printer to print the currently selected character set.

Print Errors

(From page 183.)

- **Enable**. When enabled, errors that occur print on paper and display on the panel LCD.
- **Disable**. When disabled, the error displays on the panel LCD only.

The factory default is Enable.

Printer PI

(From page 180.)

- **Disable**. The LP+ Emulation is configured with the PI line disabled.
- **Enable**. The LP+ Emulation is configured with the PI line enabled.

The factory default is Disable.

Printer Select

(From page 190, page 194.)

- **Disable**. Ignores the ASCII DC1 and DC3 control codes.
- **Enable**. Disables the printer when a DC1 control code is received, and enables the printer when a DC3 control code is received.

The factory default is Disable.

Prop Line Length

(From page 180.)

- **Enable**. The position of the next graphic element will be determined by the physical length of a text string (when using a proportional spaced font).
- **Disable**. The position of the next graphic element will be determined as if the font was monospaced (all characters had the same specified width).

The factory default is Enable.

Prop. Spacing

(From page 184, page 187, page 189, page 191, page 193.)

Each printed character is contained inside a character cell. The width of the character cell includes the character and the space around the character.

- **Enable**. The width of each character cell varies with the width of the character. For example, [i] takes less space to print than [m]. Using proportional fonts generally increases the readability of printed documents, giving text a typeset appearance.
- **Disable**. Each character cell is printed with the same width. Each column in the printed text will line up.

The factory default is Enable.

PSeries Dbl High

(From page 185.) This menu option allows printing compatibility between the current and older models of Printronix printers.

- **Normal**. This is normal Double High printing for current model printers.
- **P3/4/6/9 Compat**. Where older printers printed two dot rows higher, this option allows for compatibility by raising the print two dot rows to match the current models dot row value (two dot rows lower).

The factory default is Normal.

Repeat Form Opt

(From page 176.)

- **Enable**. Speeds up the processing of repeated forms for PGL, thereby resulting in increased printer throughput. This option provides no speed benefit for forms that are unrelated to one another and should be disabled under those circumstances.
- **Disable**. Should be selected when subsequent forms are unrelated to one another.

The factory default is Enable.

Reset Cmd CFG Ld

(From page 186, page 188, page 190, page 192, page 194.)

When the printer receives a host data stream reset command (ESC@ or ESC[K) in addition to resetting printer variables, the selected configuration is loaded.

- **Disable**. The active emulation parameters are loaded when the reset command is executed.
- **Power up config**. The power-up configuration is loaded when the reset command is executed.
- **Current config**. The currently selected configuration is loaded when the reset command is executed.
- **Factory config**. The factory installed configuration is loaded when the reset command is executed.

The factory default is Disable.

Resolution Mode

(From page 181.) The ^JM command determines the apparent print resolution of the printed label. If half resolution mode is selected by the ^JM command, the printed output of a 300 dpi printer matches that printed by a 150 dpi printer (half resolution). This essentially doubles the size of the label image, including label dimensions. If full resolution mode is selected, the output is printed normally. The Resolution Mode option displays and selects the current setting associated with the ^JM command.

The factory default is Full.

Right Margin

(From page 184, page 187, page 189, page 191, page 193.)

Set in characters. Character zero is defined as the far right edge of the page, and column numbering increments from right to left.

The range is 0-369 characters, and the factory default is 0 characters.

Rot. Char Size

(From page 179.)

- **Adjusted**. Rotated (clockwise/counterclockwise), expanded characters have a different size than an unrotated character with the same size parameters.
- **Not Adjusted**. Rotated, expanded characters will be the same size as unrotated characters with the same size parameters.

The factory default is Adjusted.

Scalable Size

(From page 176.) This option determines whether scalable characters are sized based on normal scaling or based on the size of block characters. If the option Block is set, then the scalable character are made to be the same size as block characters in the old IGP-X00 printers.

The options are Normal (the factory default) and Block.

SCS Buffer Cntrl

(From page 158.) This option functions like the Early Print Complete feature ("Early Print Cmpl (Coax, TN3270)" on page 212) but is for SCS only.

- **Don't Wait**. The printer does not wait until the buffer is printed before sending the print complete back to the host.
- **Wait Until Done**. The printer waits until the buffer has printed before sending the print complete back to the host.

NOTE: If set to Wait Until Done, printer speed may be reduced.

The factory default is Don't Wait.

Select Char

(From page 176.) Instructs the IGP which decimal character (0-255) to ignore from the host.

The range is 0-255, and the factory default is 0.

Select CPI

(From page 184, page 187, page 189, page 191, page 193.) This item selects the characters per inch (CPI) value.

The options are 10.0, 12.0, 13.3, 15.0, 17.1, and 20.0 CPI.

The factory default is 10.0 CPI.

Select LPI

(From page 175, page 184, page 187, page 189, page 191, page 193.) This is the number of lines to be printed per inch. For example, at 6 lpi there is 1/6 inch from the top of one print line to the top of the next print line.

The options are 6.0, 8.0, and 10.3 LPI.

The factory default is 6.0 LPI.

Select SFCC (PGL)

(From page 175.) You can specify which decimal code (1-255) will be used as the Special Function Control Code (SFCC). The SFCC denotes that the following data is a PGL command.

The range is 1-255, and the factory default is 126.

Select SFCC (P-Series)

(From page 185.) This P-Series feature allows you to select an ASCII code which defines the Special Function Control Code (SFCC) command code value. The factory default value is hex 01, but the P-Series options allow selection of any value ranging from hex 00 through hex 7F. This powerful feature permits the SFCC code to be assigned a value compatible with the application environment where the P-Series jobs originate. The most commonly used values include the following:

- SOH (01 hex)
- ESC (1B hex)
- ETX (03 hex)
- Circumflex (5e hex) - also called caret (^)
- Tilde (7F hex) - (~)

NOTE: Non-Printable ASCII code values range from hex 00 through hex 1F and also include hex 7F. Printable ASCII code values range from hex 20 through hex 7E. If a printable code value is chosen to define the SFCC code value, you must ensure that the printer data stream will not contain the same code value in printable text. Otherwise text containing the character for the SFCC control code value may be incorrectly processed as an SFCC command causing print errors.

The range is 0-7F, and the factory default is 1.

Select SO Char

(From page 176, page 179.) Allows you to specify a decimal code from 0 through 255 to be used in place of SO (Shift Out) as the control code which allows access for the alternate set of control function characters. See the description of the Code 128 barcodes in the *PGL Programmer's Reference Manual* for details.

The range is 0-255, and the factory default is 14.

Set Text Orientn (Coax, Twinax)

(From page 159, page 162.) Specifies the direction in which characters are printed on the page. This allows the printer to print languages which are printed right to left instead of left to right.

- **Control By Host**. Allows printers configured as a 4234 to use the “Set Text Orientation” command from the host.
- **Left to Right**.
- **Right to Left**. When you select a right to left language, the host will be notified of print direction changes when the printer is put online.

The factory default is Control By Host.

Set Text Orientn (TN3270, TN5250)

(From page 171, page 173.) Specifies the direction in which characters are printed on the page. This allows the printer to print languages which are printed right to left instead of left to right.

- **Left to Right**.
- **Right to Left**. When you select a right to left language, the host will be notified of print direction changes when the printer is put online.

The factory default is Left to Right.

SFCC (IGP/VGL)

(From page 178.) This option selects the Special Function Control Code. The default value is the caret ^ (decimal 94). Valid values are 17 through 255. Run a configuration printout to determine the currently selected SFCC.

The range is 17-255, and the factory default is 94.

SFCC (PPI2)

(From page 183.) This menu is only present when “User Defined” is selected in the SFCC menu. Using this menu, the SFCC can be set to any value between 0x0 and 0xFF.

The factory default is 0x7B.

SFCC Char (SPC Coax, SPC Twinax)

(From page 164, page 165.) Determines what character is printed when an EBCDIC Logical Not character ¬ (Hex 5F) is received from the host.

- Set 1 <%>*
- Set 2 ^^$
- Set 3 _%_
- User Defined

The factory default is Set 1 <%>.

SFCC d command

(From page 185.) This menu option is for backward compatibility.

- **Even dot plot**. This option interprets the SFCC d command as even dot plot.
- **Double high**. This option interprets the SFCC d command as double high. Select this option for backward compatibility.

The factory default is Even dot plot.

SFCC Select

(From page 183.) Use this menu to select the SFCC, SFCC-Separator, and SFCC-Terminator sets.

- **Auto Select**. The printer selects the SFCC set based upon the received host data.
- **<ESC><LF><NULL>** is a predefined set. The **ESC** character is the SFCC, the **LF** is the SFCC-Separator, and the **NULL** character is the SFCC-Terminator.
- **{ | }** is a predefined set. The **{** character is the SFCC, the **|** is the SFCC-Separator, and the **}** character is the SFCC-Terminator.
- **User Defined**. When you select User Defined, three additional menus appear in the tree. These menus allow the SFCC, SFCC-Separator, and SFCC-Terminator to be configured individually.

The factory default is Auto Select.

SFCC Separator

(From page 183.) This menu is only present when “User Defined” is selected in the SFCC menu. Using this menu, the SFCC-Separator can be set to any value between 0x0 and 0xFF.

The factory default is 0x7C.

SFCC Terminator

(From page 183.) This menu is only present when “User Defined” is selected in the SFCC menu. Using this menu, the SFCC-Terminator can be set to any value between 0x0 and 0xFF.

The factory default is 0x7D.

Skip Cmd Prefix

(From page 175.) Stands for Skip Command Prefix. This parameter determines if the printer will print any data before a PGL command is received.

- **Enable**. The printer ignores all data before a PGL command.
- **Disable**. The printer will print all data before a PGL command.

The factory default is Enable.

Slash 0

(From page 175, page 178.) This parameter allows you to print the numeral “0” with or without the slash. This option applies to all character sets except OCR A and OCR B.

- **Disable**. Zero is printed without a slash.
- **Enable**. Zero is printed with a slash.

The factory default is Disable.

Slash Zero

(From page 183.)

- **Enable**. When enabled, the zero character is overlaid with a slash character.
- **Disable**. If disabled, the zero character does not have a slash character.

The factory default is Disable.

Slashed Zero

(From page 184, page 187, page 189, page 191, page 193.)

This parameter allows you to print the numeral “0” with or without the slash. This option applies to all character sets except OCR-A and OCR-B.

- **Disable**. Zero is printed without a slash.
- **Enable**. Zero is printed with a slash.

The factory default is Disable.

Slew Relative

(From page 188.) “Slewing” is rapid vertical paper movement. This parameter determines the number of lines slewed (either 1-15 lines or 1-16 lines) when an EVFU Slew Relative command is received.

The options are 1-15 lines (the factory default) and 1-16 lines.

SPC Char Set

(From page 165.) Allows you to select the print language character set. See page 165 for the options.

The factory default is 0500 Internat 5.

SPC Null Supp

(From page 164.) SPC Null Supp stands for SPC Null Suppression.

- **Disable**. Ignores nulls. The print position does not move.
- **Enable**. Treats nulls as blank spaces.

The factory default is Disable.

SPC Space Supp

(From page 164.) This option is only available in Coax SPC emulation and is used in LU3/DSC/DSE mode only.

- **Disable**. Treats nulls and spaces normally.
- **Enable**. If the entire line consists of spaces and nulls, the line will be discarded.

The factory default is Disable.

SPC Type (SPC Coax Setup)

(From page 164.)

- **PTX NI (Printronix Non-impact)**. This option causes the printer to not line wrap at 132 characters.
- **Avatar Comp**. This option causes the printer to line wrap at 132 characters despite the current print density allowing more characters per line.

The factory default is PTX NI.

SPC Type (SPC Twinax Setup)

(From page 165.) Allows you to select a convertor which mimics a specific type of external protocol convertor:

- **MODE PTX NI** for Printronix non-impact
- **MODE 219** for Model 219 protocol convertor
- **MODE P5000** for Printronix protocol convertor
- **MODE IBM** for the IBM protocol convertor

The factory default is MODE PTX NI.

Speed CMDs

(From page 183.) This option allows you to choose whether the engine commands that affect the print/feed speed should be processed or ignored. If you want to adjust the print/feed speed through the front panel, you can use this menu to prevent the host commands from overriding these settings. When you select “Ignore,” PPI2 ignores the following commands or command parameters:

- the print speed parameter in the XS command. The parameter will have no effect; the “Print Speed” value as configured in the “MEDIA CONTROL” menu will be used.
- the feed speed parameter in the T command. The parameter will have no effect; the “Slew Speed” value as configured in the “MEDIA CONTROL” menu will be used.

The factory default is Process.

Standard Sets

(From page 175, page 180.) This item allows you to select various character sets available from the “Character Group” item.

The options are Standard, Arabic, Cyrillic, European, Greek, Hebrew, and Turkish Sets.

The factory default is Standard Sets.

Text Length

(From page 178.) Text Length is the printable length on the page below the top margin.

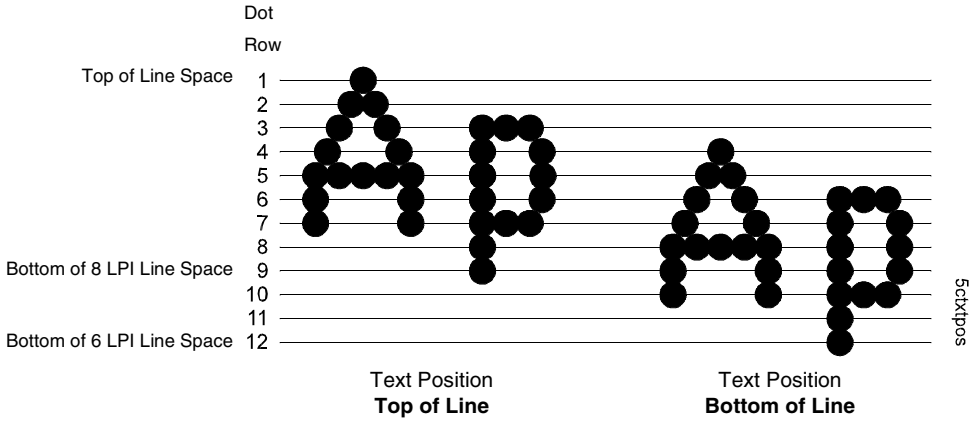
The range is 1-255, and the factory default is 66.

Text Position

(From page 186, page 188, page 190, page 192, page 194.)

Specifies where the text will be positioned in the line space.

- **Top of Line**. Text is positioned at the top of the line space.
- **Bottom of Line**. Text is positioned as if it were at the bottom of a 6 lpi line space. The following example shows both Top of Line and Bottom of Line text positions:



The factory default is Bottom of Line.

Top Margin

(From page 185, page 187, page 189, page 191, page 193.)

Defined in linespaces, starting from line zero at the top of the page and incrementing from the top down.

The range is 0-451 linespaces, and the factory default is 0 linespaces.

Top Position

(From page 181.) The value of this option specifies a vertical offset to be added to all label element positions in dots per inch. For example, if the value is 3 and the current form length is 6 inches, then 18 dots will be added to element's vertical position.

The range is -100 to 100 dots/inch, and the factory default is 0 dots/inch.

Translate Table

(From page 159.)

- **Default**. The option is disabled. The table is not stored in the real translation table until the option is enabled.
- **Downloaded**. The option is enabled. The LU3 Translation Table is loaded from the buffer into the permanent table.

The factory default is Default.

Translation Tbl (Coax, TN3270)

(From page 158, page 170) Prints out SCS and DSC/DSE tables of the coax interface's current character set. This operation is valid only when the coax interface is selected as the current interface.

Translation Tbl (SPC Coax)

(From page 164.) Prints out a table of the coax interface's current character set. This operation is valid only when the coax interface is selected.

Translation Tbl (SPC Twinax)

(From page 165.) Prints out a table of the twinax interface's current character set. This operation is valid only when the twinax interface is selected.

Translation Tbl (TN5250, Twinax)

(From page 161, page 173.) Prints out a table of the twinax interface’s current character set. This operation is valid only when the twinax interface is the current interface.

True Vert 1/10

(From page 178.)

- **Disable**. When disabled and in High Resolution, a vertical line’s length in one inch and 1/10 inch increments is interpreted as 70/72 inch and 7/72 inch respectively.
- **Enable**. When enabled, a vertical line’s length is interpreted exactly, which is 72/72 inch in one inch increments.

The factory default is Disable.

Truncate Alpha

(From page 178.)

- **Enable**. Prevents the printing of Error 48 (Element Off Page Error) if alphanumeric data, including spaces, extends beyond the right side of the form.
- **Disable**.

The factory default is Enable.

Twinax Type

(From page 161.) This parameter defines the printer emulation as follows:

- **IPDS 256 Bytes**
- **IPDS 1024 Bytes**
- **5225**
- **4234**

After the emulation has been changed, a POR status is sent to the host.

The factory default is IPDS 256 Bytes.

Typeface

(From page 184, page 187, page 189, page 191, page 193.)

- **Letter Gothic**. Letter Gothic is a non-proportional font where all of the characters take up the same amount of space when printed.
- **Courier New**. Courier is a non-proportional (monospaced) font where all characters take up the same amount of space when printed.
- **OCR-A / OCR-B**. Optical character recognition fonts printing at 120 dpi horizontally and 144 dpi vertically. Both fonts print only at 10 cpi.

The factory default is Letter Gothic.

U1/U2 Move CMDs

(From page 183.) This option allows you to choose whether the engine command to move paper forward (U1) or backward (U2) will be processed or ignored. When you select “Ignore,” the paper will not be moved when either command is received.

The factory default is Process.

Uniform Fonts

(From page 180.)

- **Disable**. The typeface selected while in Extended Graphics Mode will be cancelled when the graphics pass is complete.
- **Enable**. The typeface selected while in Extended Graphics Mode will also be used in Standard Graphics Mode and Normal Mode.

The factory default is Disable.

UPC Descenders (PGL)

(From page 176.) This parameter allows you to print bar code descenders when human readable data is not presented in the UPC/EAN bar codes.

- **Always**. UPC/EAN bar codes are printed with descenders, even if there is no human readable data.
- **Never**. UPC/EAN bar codes are printed without descenders if the PDF command is present.

- **Only With PDF**. UPC/EAN bar codes are printed with descenders only when the PDF command is presented.

The factory default is Always.

UPC Descenders (VGL)

(From page 178.)

- **Enable**. UPC/EAN bar codes are printed with descenders, even if there is no human readable data.
- **Disable**. UPC/EAN bar codes are printed without descenders if there is no human readable data.

The factory default is Enable.

Upr. Case Select

(From page 188.) Controls how the printer handles lowercase characters it receives from the host computer. When enabled, all characters are printed in uppercase.

- **Disable**. Prints lowercase characters received from the host computer as lowercase; prints uppercase characters received from the computer as uppercase.
- **Enable**. Prints lowercase characters received from the host computer as their corresponding uppercase equivalents; prints uppercase characters received from the computer as uppercase.

The factory default is Disable.

User-Def Ratio

(From page 176.) This option allows you to ignore the user-defined barcode ratio and replace it with the default ratio (X1).

- **Enable**. Allows the user-defined barcode ratio.
- **Disable**. The user-defined barcode ratio will be replaced with the default ratio (X1).

The factory default is Enable.

User-Defined St1 (Start Code 1)

(From page 159, page 161, page 164, page 165, page 171, page 173.) This option allows you to define your own value (in ASCII characters) for the User Defined option in the Lead-in Chars menu. “St1” specifies Start Code 1. See “Lead-in Chars” on page 226 for additional information.

The range is 40 - FF, and the factory default is 5F.

User-Defined St2 (Start Code 2)

(From page 159, page 161, page 164, page 165, page 171, page 173.) This option allows you to define your own value (in ASCII characters) for the User Defined option in the Lead-in Chars menu. “St2” specifies Start Code 2. See “Lead-in Chars” on page 226 for additional information.

The range is 40 - FF, and the factory default is 5F.

User-Defined Stp (Stop Code)

(From page 159, page 161, page 164, page 165, page 171, page 173.) This option allows you to define your own value (in ASCII characters) for the User Defined option in the Lead-in Chars menu. “Stp” specifies Stop Code. See “Lead-in Chars” on page 226 for additional information.

The range is 40 - FF, and the factory default is 5B.

Var Form Adjust

(From page 175.) This specifies an amount (in tenths of inches) to add to the length of variable-length forms. Variable-length forms use a semicolon at the end of the CREATE command: ~CREATE;<FORMNAME>;0.

Typically, variable-length forms are determined by the elements within the form. The longest form element becomes the overall form length. This option allows an additional space to be added to the form length.

The range is 00.0 to 03.0 inches, and the factory default is 00.0 inches.

Var Form Type

(From page 175.)

- **Add Nothing**. When selected, no action is taken.
- **Add ;0**. When selected, the form length ends at the longest printed element. (Same as ~CREATE;filename;0)
- **Add ;X**. When selected, the form length is the same as the physical page length (the Label Length menu under MEDIA CONTROL). (Same as ~CREATE;filename;X)

The factory default is Add Nothing.

Vert. DPI Adjust

(From page 183.) This option fine adjusts the resolution used to convert the coordinates of page elements (barcodes, font fields, graphic images, lines and boxes). The coordinates received from the host are in 1/10 mm and are converted to engine resolution (203 or 300 dpi). In cases where the printed image length is incorrect, the vertical resolution value PPI2 uses for calculations can be fine adjusted between –100 and +100. Negative values result in a lower DPI value and thus a longer image. Positive values result in a higher DPI value and thus a shorter image. Note that this adjustment does not affect the size of fonts and barcodes, only the coordinates.

The factory default is 0.

Vertical Adjust

(From page 182.) This option allows you to enable or disable vertical density adjustment.

- **Enable.** Vertical density adjustment is active and will use the Vertical Density value selected.
- **Disable.** No vertical density adjustment will take place.

The factory default is Enable.

Vertical Density (PPI1)

(From page 182.) When Vertical Adjust = Enable, this option allows you to fine tune the vertical print density (in the paper motion direction) on printers with 203 or 300 dpi print heads. The result is that the vertical position and height will be changed accordingly. Selecting a greater vertical density value causes the image to compress or expand vertically on the label.

- On printers with 203 dpi printhead, the range is 201-220 dpi, and the factory default is 207 dpi.
- On printers with 300 dpi printhead, the range is 301-330 dpi, and the factory default is 300 dpi.

Vertical Density (VGL)

(From page 179.) Applies only to 203 dpi printheads and only to normal resolution mode.

The range is 195 to 210, and the factory default is 203.

Vertical DPI

(From page 184, page 187, page 189, page 189, page 191, page 193.)

This feature enables the thermal printer to print images as close as possible to the same size as those originally programmed for a line matrix or laser printer by selecting a vertical resolution that matches that of the printer that the file was originally generated for.

Although the range allows a selection of up to 400 dpi, the thermal printer is capable of printing up to 203 dpi (T5204, T5206, T5208) and 300 dpi (T5304, T5306, T5308) vertical resolution.

The range is 72-400 DPI, and the factory default is 72 DPI.

VPA Check

(From page 166.)

- **Enable**. The printer checks for dots that fall outside the intersection of the logical and physical pages. If dots fall outside the area, the printer reports an error to the host if the IPDS Exception Handling Control command setting requires error reporting.
- **Disable**. The printer does not report dots outside the valid printable area.

The factory default is Enable.

Width Limit

(From page 179.) When enabled, the system will limit the length and width for expanded characters to a limit shown in Table 7, which shows the maximum width allowed for a specific height in the range of 00 through 40 (0.0 through 4.0 inches).

The factory default is Disable.

Table 7. Width Limit Table

Height Param.	Max. Width Allowed	Height Param.	Max. Width Allowed
00	99	21	51
01	99	22	53
02	3	23	56
03	6	24	58
04	8	25	61
05	11	26	63
06	13	27	66
07	16	28	68
08	18	29	71
09	21	30	73
10	23	31	76
11	26	32	78
12	28	33	81
13	31	34	83
14	33	35	86
15	36	36	88
16	38	37	91
17	41	38	93
18	43	39	96
19	46	40	98
20	48		

XS Media ‘D’ Act

(From page 183.) This option defines in which media mode PPI2 will operate on receipt of a ‘D’ (strip mode) for the issue mode parameter in the XS command. Any of the supported media modes can be selected. When you select “Ignore,” PPI2 will use the issue mode as configured through “Media Handling” under the “MEDIA CONTROL” menu.

The factory default is Tear-Off.

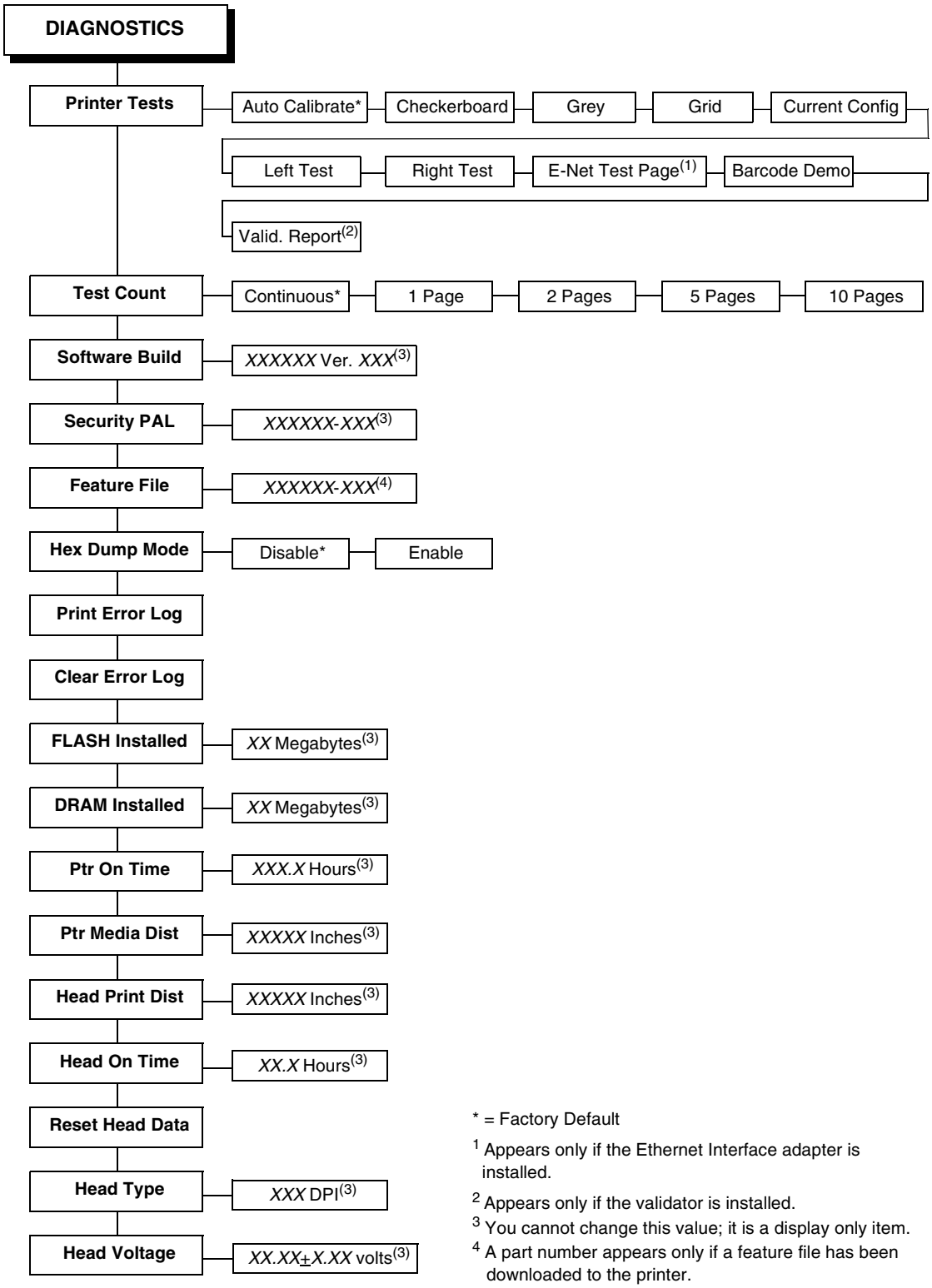
ZPL Compatible

(From page 181.) This menu allows you to select the compatibility to ZPL-I or ZPL-II.

- **ZPL-I** = Zebra Programming Language I.
- **ZPL-II** = Zebra Programming Language II.

The factory default is ZPL-II.

DIAGNOSTICS



* = Factory Default

[1] Appears only if the Ethernet Interface adapter is installed.

[2] Appears only if the validator is installed.

[3] You cannot change this value; it is a display only item.

[4] A part number appears only if a feature file has been downloaded to the printer.

DIAGNOSTICS Submenus

Printer Tests

The printer tests below allow you to check for proper printer operation and print quality:

- **Auto Calibrate**. Senses paperout, perforation, gap, or mark, and calibrates the printer for the currently installed media.
- **Checkerboard**. This pattern helps identify marginal printhead elements, quality of edge sharpness, and uneven print quality.
- **Grey**. This pattern helps identify burned out printhead elements and uneven print quality.
- **Grid**. This pattern helps identify edge sharpness and uneven print quality.
- **Current Config**. Prints the current printer configuration and helps identify the text print quality.
- **Left Test**. Prints a pattern containing a series of ladder-type bar code symbols, starting with four and decrementing by one symbol on each print until a single symbol prints on the *left* side. This pattern helps identify ribbon wrinkle problems.
- **Right Test**. Prints a pattern containing a series of ladder-type bar code symbols, starting with four and decrementing by one symbol on each print until a single symbol prints on the *right* side. This pattern helps identify ribbon wrinkle problems.
- **E-Net Test Page**. This item appears only if the Ethernet Interface adapter is installed. Prints the Ethernet statistics stored on the Ethernet Interface adapter.
- **Barcode Demo**. Prints text and barcodes with the barcodes positioned at the left and right margins of the standard label media supplied with the printer. The test automatically produces output for 4, 6, and 8 inch printers at 203 dpi and 300 dpi.
- **Valid. Report**. This item appears only if the validator is installed. Prints a report of the validation statistics since the printer was turned on or since the last data reset.

Once you have selected the desired test pattern, press ↵ to start printing. If the Test Count option (below) is set to Continuous (the default), press ↵ again to stop printing.

The factory default is Auto Calibrate.

Test Count

This item selects the number of times the selected test pattern will be printed.

The options are Continuous, 1 Page, 2 Pages, 5 Pages, and 10 Pages.

The factory default is Continuous.

Software Build

This is the reference number which includes the program file part number and revision number of the software installed in the printer, e.g., 358186 V1.07G.

Security PAL

Displays the part number of the Security PAL (device) installed.

Feature File

Displays the part number only when a feature file has been installed.

Hex Dump Mode

- **Disable**.
- **Enable**. The printer prints out data sent from the host in hexadecimal format.

Also see page 218.

The factory default is Disable.

Print Error Log

Prints the current log of errors. Most non-routine faults (RIBBON FAULT, PRINT HEAD HOT) are stored in the error log.

Clear Error Log

Clears entries in the error log.

FLASH Installed

Displays the amount of FLASH memory installed in megabytes.

DRAM Installed

Displays the amount of DRAM installed in megabytes.

Ptr On Time

Displays the cumulative time in hours the printer has been powered on. This value is set to zero at the factory after burn-in testing.

Ptr Media Dist

Displays the cumulative number of inches the printer has moved media. This value is set to zero at the factory after burn-in testing.

Head Print Dist

Displays the length of media actually printed since the last Reset Head Data operation. This value is set to zero at the factory after burn-in testing.

Head On Time

Displays the time that power has been applied to the printhead since the last Reset Head Data operation. This value is set to zero at the factory after burn-in testing.

Reset Head Data

Resets all printhead statistics values (Head Prt Dist and Head On Time) to zero.

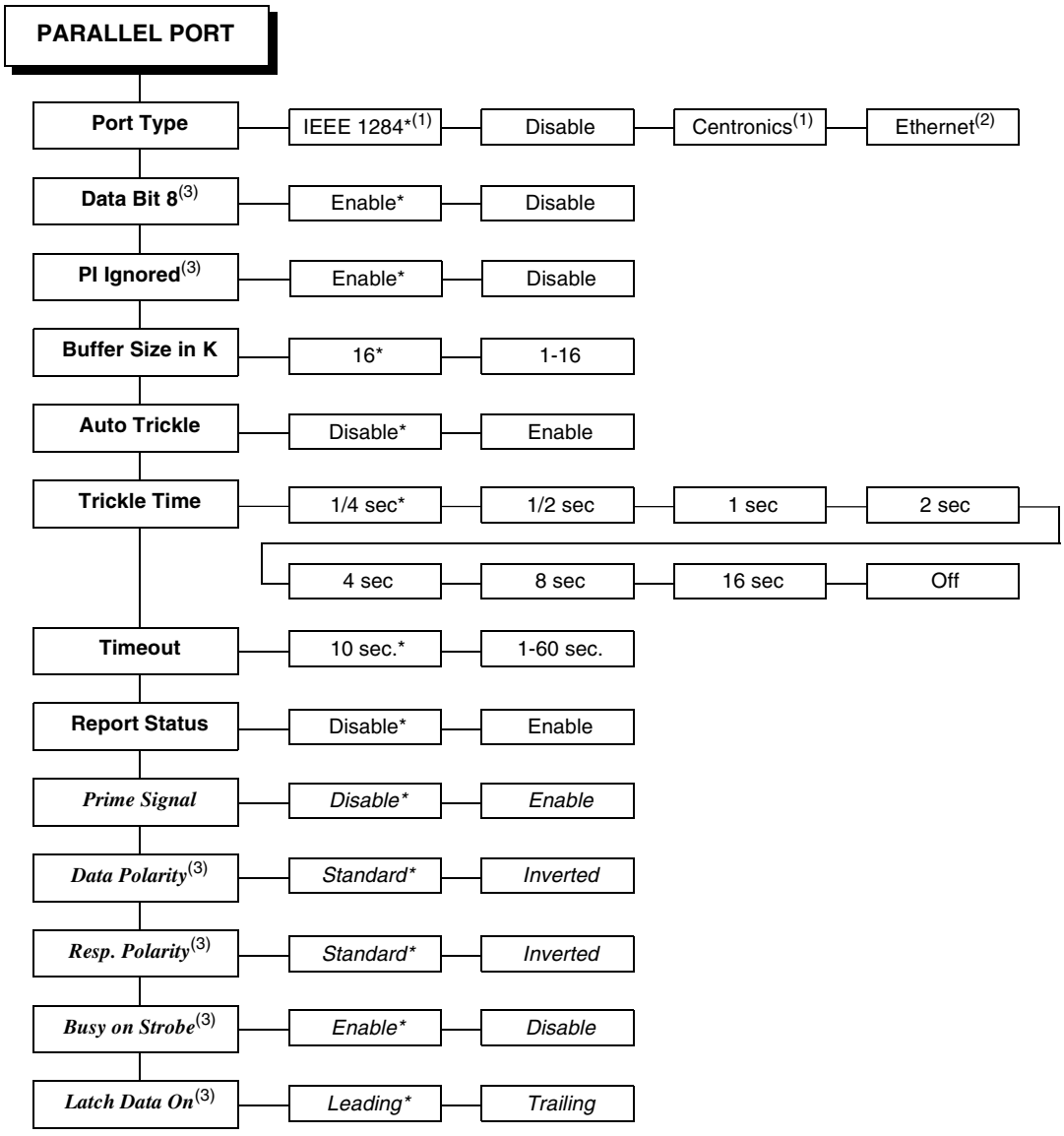
Head Type

Displays the printhead type installed in dots per inch (203 dpi or 300 dpi).

Head Voltage

Displays the applied printhead voltage.

PARALLEL PORT



Notes:

* = Factory Default

Italicized items are available only when Admin User is enabled (in the PRINTER CONTROL menu).

[1] Does not display when Ethernet is installed.

[2] Available only when Ethernet is installed.

[3] Available only when the Centronics option is enabled (in the Port Type submenu of PARALLEL PORT).

PARALLEL PORT Submenus

Port Type

This menu item selects the type of printer parallel port interface to be used with the host.

The options are IEEE 1284, Disable, Centronics, and Ethernet.

NOTE: The Ethernet option is available only if Ethernet is installed. When Ethernet is installed, the IEEE 1284 and Centronics options do not display.

The factory default is IEEE 1284.

Data Bit 8

- **Enable**. The PI line is not passed directly from host to printer; all 8 bits are used for data bits, and characters in the hex 80-FF range can be accessed.
- **Disable**. When the host PI line is enabled, data bit 8 internally indicates PI line status. To use the PI line, disable data bit 8, and enable the Host PI configuration option (under the PI Ignored option).

NOTE: Data bit 8 is interpreted as either data bit 8 or PI signal, but never both. When enabled as data bit 8, data bit 8 has priority over the PI signal, and all data above hex 7F is used to access character data and not to interpret PI line data.

Conversely, when data bit 8 is disabled and the PI signal is used, data bit 8 of the data is reserved for use as the PI function, and you cannot access characters in the hex 80-FF range. Therefore, to access characters in the hex 80-FF range, data bit 8 must be enabled.

The factory default is Enable.

PI Ignored

The PI (Paper Instruction) signal is used to control vertical paper motion.

- **Enable**. Ignores the PI signal and treats the data as characters or control codes.
- **Disable**. Causes the printer to interpret the eight data lines as VFU commands when the PI signal is true.

The factory default is Enable.

Buffer Size in K

This option configures the amount of memory allocated for the Ethernet buffer. The range is 1-16 Kbytes, in 1-Kbyte increments.

The factory default is 16 Kbytes.

Auto Trickle

This feature is used to prevent a host computer from “timing out” because the parallel interface is “busy” for too long.

- **Enable**. When the printer’s buffers are almost full, the printer begins to trickle data in from the host (at the rate set in the Trickle Time menu) until the buffers start to empty out.
- **Disable**. The Auto Trickle feature is not used.

The factory default is Disable.

Trickle Time

When the printer is printing data from a host and a second print job is received by the printer from a different host, Trickle Time prevents the second host from timing out while it is waiting for its data to be printed. In order to support this feature, the port has to be able to accept data from the host and store it for future use.

For example, if the printer is printing a job from the serial port, and then receives a second print job from the parallel port, the data from the parallel port will “trickle” bit by bit into the printer buffer to prevent a timeout error from being sent back to the host connected to the parallel port.

The selected value is the time that the printer waits before getting the next byte of data from the host. The Trickle Time value should be less than the host time out value, but not too much shorter or else the printer fills up its buffer too fast. This function is not applicable for C/T hotport.

The options are 1/4, 1/2, 1, 2, 4, 8, and 16 seconds and Off.

The factory default is 1/4 second.

Timeout

This is the value used by the printer to time out from the current port and check the other selected port types for data to print. When the printer has not received data from the host after a certain period of time, it needs to time out in order to service the other ports.

The range is 1-60 seconds, and the factory default is 10 seconds.

Report Status

- **Disable**. When a fault occurs on the printer, only the active port reports the fault to the host.
- **Enable**. The port will report any fault even when it is not the current active port.

The factory default is Disable.

Prime Signal

- **Disable**. The parallel port will not perform a warm start (reboot) if the host asserts the Prime Signal.
- **Enable**. The parallel port will perform a warm start (reboot) if the host asserts the Prime Signal.

The factory default is Disable.

Data Polarity

The Data Polarity parameter must be set to match the data polarity of your host computer.

- **Standard**. Does not expect the host computer to invert the data.
- **Inverted**. Expects the data received on the data lines from the host computer to be inverted. Ones become zeros and vice versa.

The factory default is Standard.

Resp. Polarity

The Response Polarity parameter must be set to match the response polarity of your host computer.

- **Standard**. Does not invert the response signal.
- **Inverted**. Inverts the response signal sent to the host computer.

The factory default is Standard.

Busy on Strobe

- **Enable**. Asserts a busy signal after each character is received.
- **Disable**. Asserts a busy signal only when the print buffers are full.

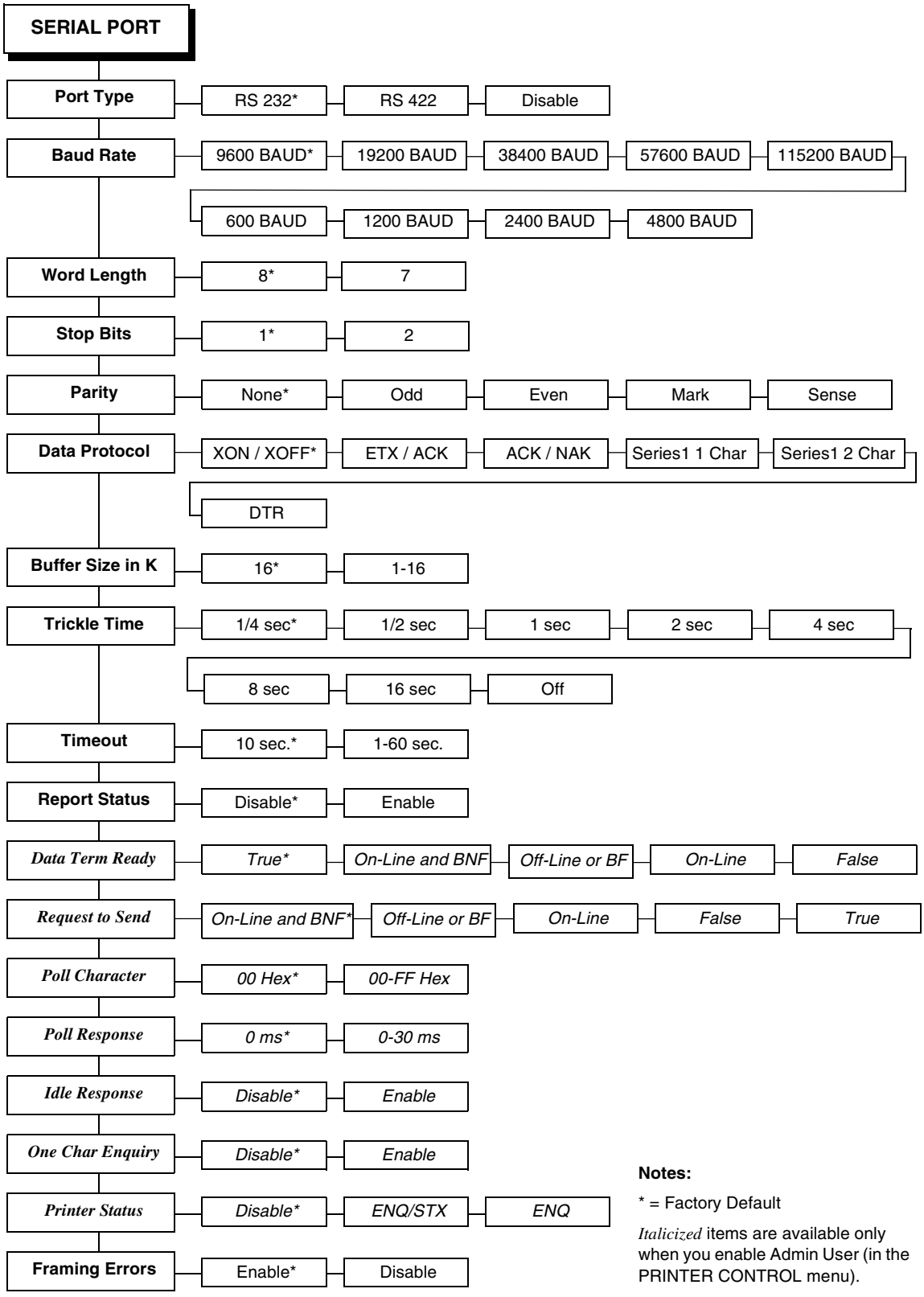
The factory default is Enable.

Latch Data On

Specifies whether the data is read on the leading or trailing edge of the data strobe signal.

The options are Leading (the factory default) and Trailing.

SERIAL PORT



Notes:

* = Factory Default

Italicized items are available only when you enable Admin User (in the PRINTER CONTROL menu).

SERIAL PORT Submenus

Port Type

This item allows you to select the type of printer serial port interface, RS-232 or RS-422, to be used with its host. The serial port can also be disabled.

The factory default is RS 232.

Baud Rate

Sets the baud rate of the serial interface in the printer. Baud rate is the speed at which serial data is transferred between the host computer and the printer. The options for the RS-232 and RS-422 interfaces are 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, and 115200 Baud.

NOTE: If you select a baud rate that is greater than 19200 and you experience data loss, you may need to lower the baud rate or use RS-422. You also may need to increase the Buffer Size in K parameter from the default (1 Kbyte) to improve performance.

The factory default is 9600.

Word Length

Sets the length of the serial data word. The length of the data word can be set to 7 or 8 bits and must match the corresponding data bits setting in the host computer.

The factory default is 8.

Stop Bits

Sets the number of stop bits in the serial data word. Either 1 or 2 stop bits can be selected. The setting must match the corresponding stop bit setting in the host computer.

The factory default is 1.

Parity

The options are Odd, Even, Mark, Sense, or None. The setting must match the corresponding parity setting in the host computer.

The factory default is None.

Data Protocol

You can select one of the following serial interface protocols to meet the host interface requirements.

- **XON / XOFF**. The printer controls the flow of communication from the host by turning the transmission on and off. In some situations, such as when the buffer is full or the timing of signals is too slow or too fast, the printer will tell the host to stop transmission by sending an XOFF character. An XOFF character is sent when the number of empty bytes in the buffer is less than or equal to 25 percent of the buffer size. If the host keeps sending data after an XOFF is sent, the printer firmware will continue to send an XOFF for every 16 characters received. When cleared, the printer will resume receiving data (XON). The data does not have any End of Text codes; XON / XOFF is a non-block protocol.
- **ETX / ACK**. End of Text / Acknowledge. The host controls the flow of communication to the printer by sending a block of data and ending the block with an End of Text (ETX) signal. When the printer receives the ETX signal, it will acknowledge the ETX, thereby acknowledging it has received the entire block of data.
- **ACK / NAK**. ACK means acknowledge; the device acknowledges it has accepted a transmission. NAK means negative acknowledge; the device did not receive the transmission.
- **Series1 1 Char**. The printer controls the flow of communication from the host by turning the transmission on and off using response characters sent to the host. If the number of valid bytes in the buffer reaches 75 percent of the buffer size, the online or offline and buffer full response character is sent. If the buffer is completely full, an online or offline buffer full response is sent every time a character is sent from the host. Whenever the printer state changes to online or offline, the appropriate response character is sent. If the idle response option is enabled, the printer will send a response character every two seconds while the number of valid bytes in the buffer is less than 75 percent of the buffer size. If a poll character is received (configurable from the Poll Character *xx* Hex option on the front panel from hex 0 through FF), the printer will send a response character n milliseconds later (configurable from the Poll Character *xx* MS on the front panel from 0 through 30). This *n* milliseconds is called the poll delay. The poll character will be removed from the input data stream and will not be processed. This may cause problems with the transmission of binary data (e.g., control codes, bit image, etc.). If a poll delay is started due to the receipt of a poll character and another poll character is received, the second poll character has no effect and is removed from the input data stream. If a transition (from buffer full to empty or online to offline) occurs during a poll delay, the new printer state will be sent at the end of the poll delay.

The response characters are described below.

Printer State	Response
Online and Buffer Empty	CR
Online and Buffer Full	3
Offline and Buffer Empty	0
Offline and Buffer Full	2

- **Series1 2 Char.** This protocol behaves exactly the same as the Series 1 Char except there is a two-character response to the host. The response characters are described in the following table:

Printer State	Response
Online and Buffer Empty	1 CR
Online and Buffer Full	3 CR
Offline and Buffer Empty	0 CR
Offline and Buffer Full	2 CR

- **DTR**. The printer controls the data flow by sending this hardware signal to the host. If there is enough room in the printer buffer, the printer will send a high signal; if the buffer is full, the printer will send a low signal. DTR tells the host if it is safe to send more data. (If the host sends data during an unsafe condition, data will be lost.) DTR is not available when RS-422 is selected.

The factory default is XON / XOFF.

Buffer Size in K

This option configures the amount of memory allocated for the serial port buffer. The range is 1-16 Kbytes, in 1-Kbyte increments.

NOTE: If you select a baud rate that is 19200 or greater, you may need to increase the Buffer Size in K parameter from the default to 16 Kbytes to improve performance.

The factory default is 16.

Trickle Time

When the printer is printing data from a host and a second job is received by the printer from a different host, Trickle Time prevents the second host from timing out while it is waiting for its data to be printed. In order to support this feature, the port has to be able to accept data from the host and store it for future use.

For example, if the printer is printing a job from the serial port and then receives a second print job from the parallel port, the data from the parallel port will “trickle” bit by bit into the printer buffer to prevent a timeout error from being sent back to the host connected to the parallel port.

The selected value is the time that the printer waits before getting the next byte of data from the host. The Trickle Time value should be less than the host time out value, but not too much shorter or else the printer fills up its buffer too fast. This function is not applicable for C/T hotport.

The options are 1/4, 1/2, 1, 2, 4, 8, and 16 seconds and Off.

The factory default is 1/4 sec.

Timeout

This is the value used by the printer to time out from the current port and check the other selected Port Types for data to print. When the printer has not received data from the host after a certain period of time, it needs to time out in order to service the other ports.

The range is 1-60 seconds, and the factory default is 10 seconds.

Report Status

When a fault condition occurs in the printer, normally only the active port reports the fault to the host. With this menu item enabled, the port will report any fault even when it is not the current, active port.

The options are Disable (the factory default) and Enable.

Data Term Ready

Stands for Data Terminal Ready. This configuration is part of hardware flow control and determines when the Data Terminal Ready (DTR) signal is generated. This signal indicates if the printer is ready to receive data.

- **True**. Continuously asserts the DTR signal.
- **On-Line and BNF (buffer not full)**. Asserts the DTR signal when the printer is online and the internal serial buffer is not full.
- **Off-Line or BF (buffer full)**. Asserts the DTR signal when the printer is offline or the internal serial buffer is full.
- **On-Line**. Asserts the DTR signal when the printer is online.
- **False**. Never asserts the DTR signal.

The factory default is True.

Request to Send

This configuration is part of hardware flow control and determines when the Request to Send (RTS) signal is generated. This signal indicates whether or not the printer is ready to receive data.

- **On-Line and BNF**. Asserts the RTS signal when the printer is online and the internal serial buffer is not full.
- **Off-Line or BF**. Asserts the RTS signal when the printer is offline or the internal serial buffer is full.
- **On-Line**. Asserts the RTS signal when the printer is online.
- **False**. Never asserts the RTS signal.
- **True**. Continuously asserts the RTS signal.

The factory default is On-Line and BNF.

Poll Character

This option is for the Series1 protocol. Whenever the printer receives this character, it sends a response to the host indicating the current state of the printer (see Series1 protocol).

The range is 00-FF Hex, and the factory default is 00 Hex.

Poll Response

This option is for the Series1 protocol. After receiving a poll character, the printer will wait the poll response time in milliseconds before sending the response.

The range is 0-30 ms, and the factory default is 0 ms.

Idle Response

This option is for the Series1 protocol.

- **Disable**.
- **Enable**. The printer sends a response character every two seconds while the number of valid bytes in the buffer is less than 75 percent of the buffer size.

The factory default is Disable.

One Char Enquiry

The One Char Enquiry mode uses the Poll Character to detect a request from the host and sends a response back to the host. This option also allows you to turn on and off this feature.

Table 8. One Char Enquiry Response Characters

Printer State	Response (hex)
Online and Buffer Not Full	20
Online and Buffer Full	21
Offline and Buffer Not Full	22
Offline and Buffer Full	23

The Poll Character is removed from the data stream. If the Data Protocol is set to ETX/ACK, ACK/NAK, or Series1, One Char Enquiry is automatically disabled.

The options are Disable (the factory default) and Enable.

Printer Status

- **Disable**. Printer status ignored.
- **ENQ/STX** (see Table 9).
- **ENQ** (see Table 10).

When enabled, the printer will respond to an ENQ character by sending a status byte to the host. The type of status byte is determined by a Front Panel Menu selection. The selections allowed are ENQ/STX and ENQ. The ENQ is removed from the data stream.

Table 9. ENQ/STX Status Byte

Bit	Printer Status
0	Set when the printer is not online or the buffer is full.
1	Set when the printer is offline.
2	Clear during a paper out or RibbonMinder fault.
3	Always set.
4	Set during a Head Open fault.
5	Set during a buffer overflow fault.
6	Set during a parity or framing error fault.
7	Always clear.

Table 10. ENQ Status Byte

Bit	Printer Status
0	Set when the label has printed.
1	Set when the label is presented.
2	Set while the printer is online.
3	Always set.
4	Set printing in the batch mode.
5	Set during a Ribbon fault.
6	Set during a Paper Out fault.
7	Set during a Head Open fault.

The factory default is Disable.

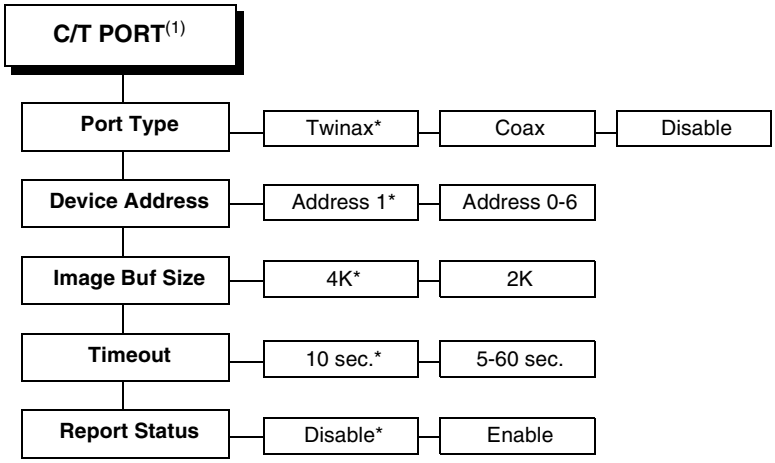
Framing Errors

These are possible errors that can occur when serial interface settings of the printer do not match those of the host computer.

- **Enable**. If a framing error occurs, a fault message will display on the control panel.
- **Disable**. If a framing error occurs, a fault message will not display on the control panel.

The factory default is Enable.

C/T PORT



Notes:

* = Factory Default

[1] Appears only if the CTHI option is installed.

C/T PORT Submenus

Port Type

This item selects the desired active CTHI interface and appears only when the CTHI option is installed.

The factory default is Twinax.

Device Address

Allows you to set the device address from 0 through 6. The host directs data and commands on the twinax line to a specific device based on its unique device address. After the address has been changed, a Power On Reset (POR) status is sent to the host.

The factory default is 1.

Image Buf Size

Allows you to select 4K or 2K as the image buffer size. This option is only valid when the printer emulates 3287. For the 4234 emulation, the buffer size is fixed at 4K. A POR status is sent to the host when the printer is put online.

The factory default is 4K.

Timeout

This item allows you to set the time that the printer, when it has not received data from its host, will begin to service all other host ports looking for data to print.

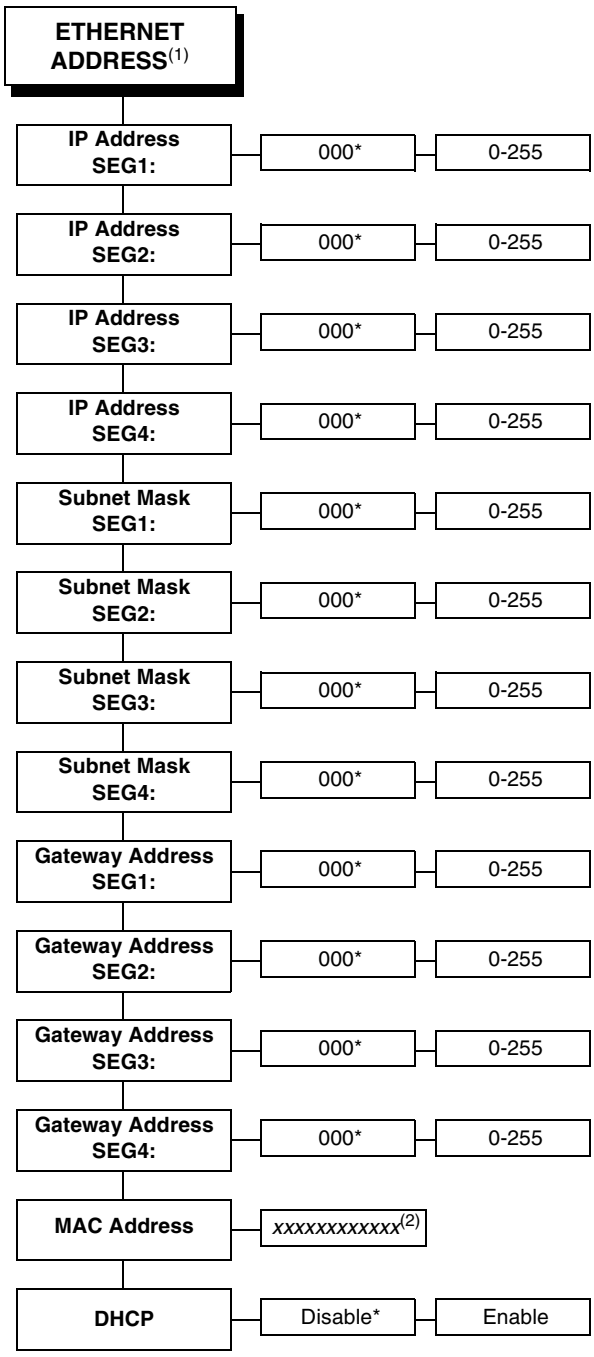
The range is 5-60 seconds, and the factory default is 10 seconds.

Report Status

When a fault condition occurs in the printer, normally only the active port reports the fault to the host. With this item enabled, the port will report any fault even when it is not the current, active port.

The options are Disable (the factory default) and Enable.

ETHERNET ADDRESS



Notes:

* = Factory Default

[1] Appears only if an Ethernet Network Interface Card (NIC) is installed.

[2] You cannot change this value; it is a display only item.

ETHERNET ADDRESS Submenus

IP Address

This item allows you to set the IP Address for the TCP/IP protocol in four three-digit segments (SEG1 through SEG4). If the IP Address is assigned by Bootp, ARP or DHCP, it is dynamic and read-only.

The factory defaults for the SEG1 through SEG4 are 000, 000, 000, and 000.

NOTE: When changing the IP Address, the printer resets the Network Interface Card (NIC) when the printer is placed online. When the printer resets the NIC, the LCD displays DO NOT POWER OFF. After the NIC has completed its initialization, the LCD displays E-NET INIT to signal that the NIC and printer are in the initialization process. When both the NIC and printer have completed initialization, the LCD displays E-NET READY.

Subnet Mask

This item allows you to set the Subnet Mask for the TCP/IP protocol in four three-digit segments (SEG1 through SEG4). If the Subnet Mask is assigned by Bootp, Arp or DHCP, it is dynamic and read-only.

The factory defaults for the SEG1 through SEG4 are 000, 000, 000, and 000.

NOTE: When changing the Subnet Mask, the printer resets the NIC when the printer is placed online. When the printer resets the NIC, the LCD displays DO NOT POWER OFF. After the NIC has completed its initialization, the LCD displays E-NET INIT to signal that the NIC and printer are in the initialization process. When both the NIC and printer have completed initialization, the LCD displays E-NET READY.

Gateway Address

This item allows you to set the Gateway Address for the TCP/IP protocol in four three-digit segments (SEG1 through SEG4). If the Gateway Address is assigned by Bootp, ARP or DHCP, it is dynamic and read-only.

The factory defaults for the SEG1 through SEG4 are 000, 000, 000, and 000.

NOTE: When changing the Gateway Address, the printer resets the NIC when the printer is placed online. When the printer resets the NIC, the LCD displays DO NOT POWER OFF. After the NIC has completed its initialization, the LCD displays E-NET INIT to signal that the NIC and printer are in the initialization process. When both the NIC and printer have completed initialization, the LCD displays E-NET READY.

MAC Address

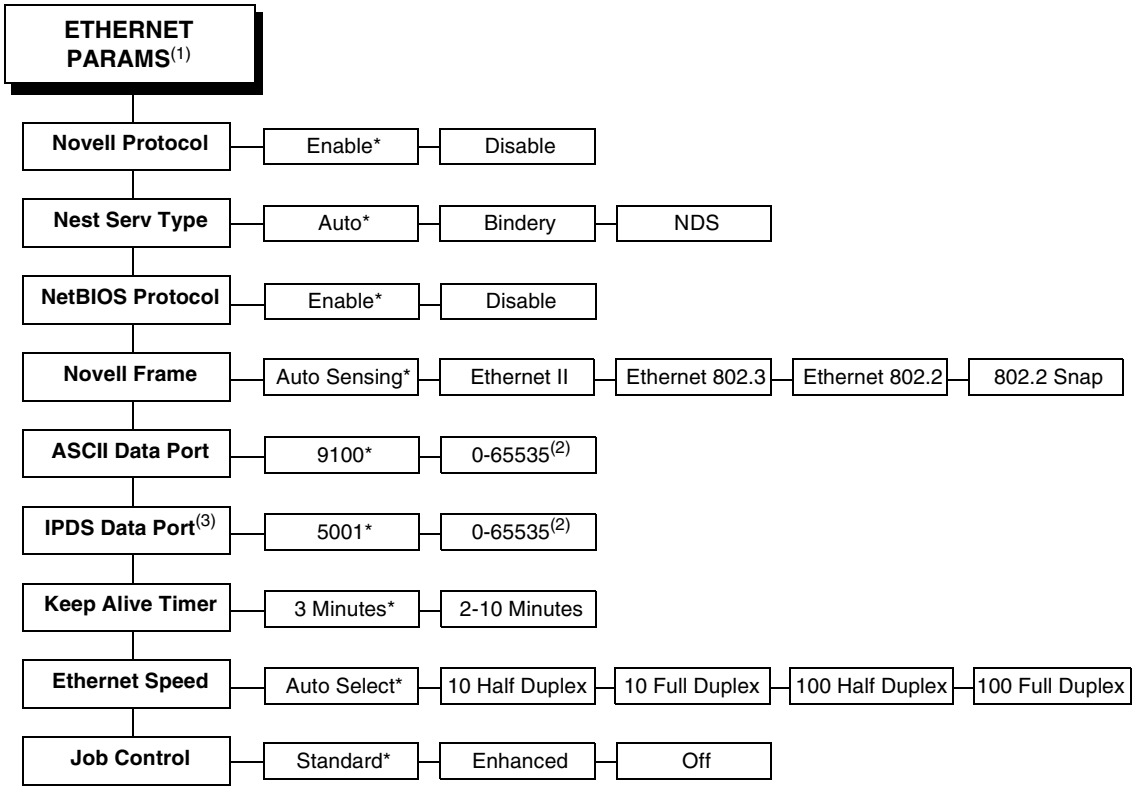
This item is the Manufacturer's Assigned Number, and is unique for each NIC. It is read-only.

DHCP

You can enable/disable the DHCP protocol using this option, but consult your administrator for the appropriate setting.

The options are Disable (the factory default) and Enable.

ETHERNET PARAMS



Notes:

* = Factory Default

1 Appears only if an Ethernet Network Interface Card (NIC) is installed.

2 Set the port number that works with your host system.

3 Appears only if the IPDS emulation is installed.

ETHERNET PARAMS Submenus

Novell Protocol

- **Enable**. The NIC will respond to the Novell protocol.
- **Disable**. The NIC does not recognize the Novell protocol.

The factory default is Enable.

Nest Serv Type

You can change the Nest Server using this option, but consult your administrator for the appropriate setting.

The options are Auto (the factory default), Bindery, and NDS.

NetBIOS Protocol

- **Enable**. The NIC will respond to the NetBIOS protocol.
- **Disable**. The NIC does not recognize the NetBIOS protocol.

The factory default is Enable.

Novell Frame

This menu option provides selection of the frame type for the Novell protocol. For the definition of each frame type, refer to the appropriate Novell-authorized documents.

The factory default is Auto Sensing.

ASCII Data Port

This option allows you to set the port number for ASCII print jobs. The data port number needs to match your host system setting.

The range is 0 - 65535, and the factory default is 9100.

IPDS Data Port (IPDS emulation only)

This option allows you to set the port number for IPDS print jobs.

The range is 0 - 65536, and the factory default is 5001.

Keep Alive Timer

This is the time that the Keep Alive Timer will run. Keep in mind that with the Keep Alive Timer on, the tcp connection will stay connected even after the print job has terminated.

The range is 2-10 minutes, and the factory default is 3 minutes.

Ethernet Speed

This menu appears only if a 10/100Base-T Network Interface Card (NIC) is installed.

The Ethernet Speed menu has five different speed modes to allow compatibility with different systems and networks:

- **Auto Select**. Tells the 10/100Base-T NIC to perform an auto detection scheme and configure itself to be 10 Half Duplex, 10 Full Duplex, 100 Half Duplex, or 100 Full Duplex.
- **10 Half Duplex**. Tells the 10/100Base-T NIC to communicate at 10 Megabits per second using half duplex.
- **10 Full Duplex**. Tells the 10/100Base-T NIC to communicate at 10 Megabits per second using full duplex.
- **100 Half Duplex**. Tells the 10/100Base-T NIC to communicate at 100 Megabits per second using half duplex.
- **100 Full Duplex**. Tells the 10/100Base-T NIC to communicate at 100 Megabits per second using full duplex.

The factory default is Auto Select.

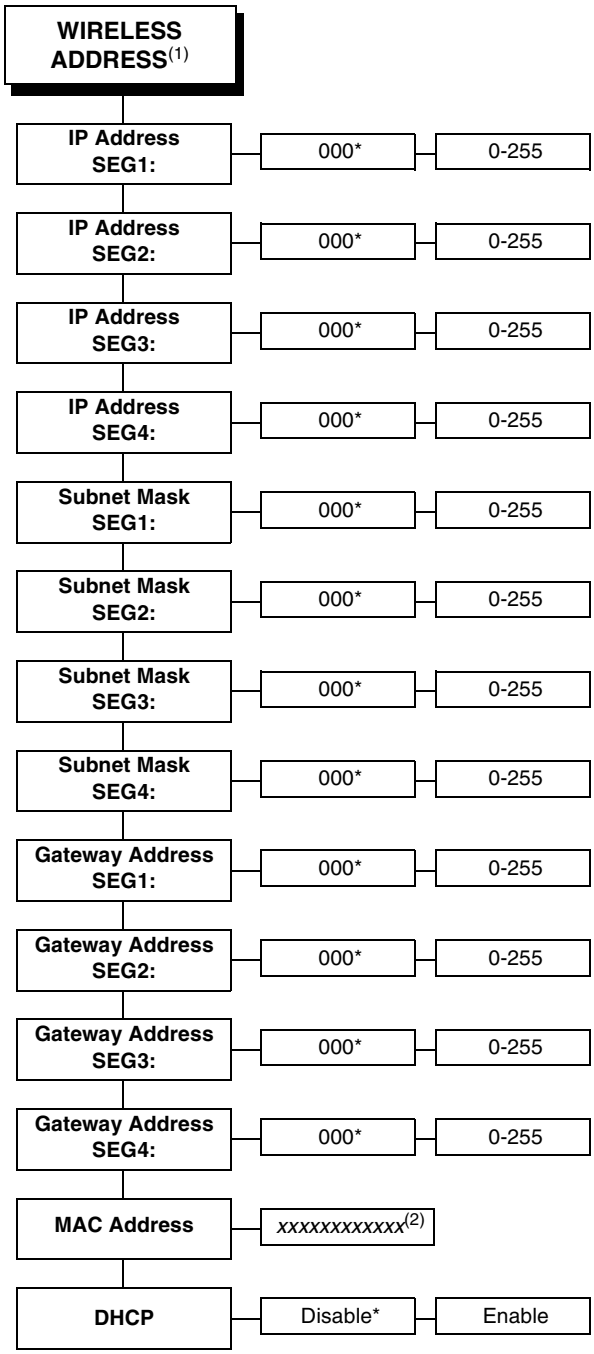
Job Control

- **Standard**. The NIC waits for the entire job to be *received* before it indicates the job is done.
- **Enhanced**. The NIC waits for the entire job to be *printed* before it indicates the job is done.
- **Off**. There is no synchronization between the NIC and the printer.

The factory default is Standard.

NOTE: For detailed information about using the NIC, refer to the *Network Interface Card User's Manual*.

WIRELESS ADDRESS



Notes:

* = Factory Default

[1] Appears only if a Wireless Option is installed.

[2] You cannot change this value; it is a display only item.

WIRELESS ADDRESS Submenus

IP Address

This item allows you to set the IP Address for the TCP/IP protocol in four three-digit segments (SEG1 through SEG4). If the IP Address is assigned by Bootp, ARP or DHCP, it is dynamic and read-only.

The factory defaults for the SEG1 through SEG4 are 000, 000, 000, and 000.

When changing the IP Address, the printer resets the Network Interface Card (NIC) when the printer is placed online. When the printer resets the NIC, the LCD displays DO NOT POWER OFF. After the NIC has completed its initialization, the LCD displays E-NET INIT to signal that the NIC and printer are in the initialization process. When both the NIC and printer have completed initialization, the LCD displays E-NET READY.

Subnet Mask

This item allows you to set the Subnet Mask for the TCP/IP protocol in four three-digit segments (SEG1 through SEG4). If the Subnet Mask is assigned by Bootp, Arp or DHCP, it is dynamic and read-only.

The factory defaults for the SEG1 through SEG4 are 000, 000, 000, and 000.

When changing the Subnet Mask, the printer resets the NIC when the printer is placed online. When the printer resets the NIC, the LCD displays DO NOT POWER OFF. After the NIC has completed its initialization, the LCD displays E-NET INIT to signal that the NIC and printer are in the initialization process. When both the NIC and printer have completed initialization, the LCD displays E-NET READY.

Gateway Address

This item allows you to set the Gateway Address for the TCP/IP protocol in four three-digit segments (SEG1 through SEG4). If the Gateway Address is assigned by Bootp, ARP or DHCP, it is dynamic and read-only.

The factory defaults for the SEG1 through SEG4 are 000, 000, 000, and 000.

When changing the Gateway Address, the printer resets the NIC when the printer is placed online. When the printer resets the NIC, the LCD displays DO NOT POWER OFF. After the NIC has completed its initialization, the LCD displays E-NET INIT to signal that the NIC and printer are in the initialization process. When both the NIC and printer have completed initialization, the LCD displays E-NET READY.

MAC Address

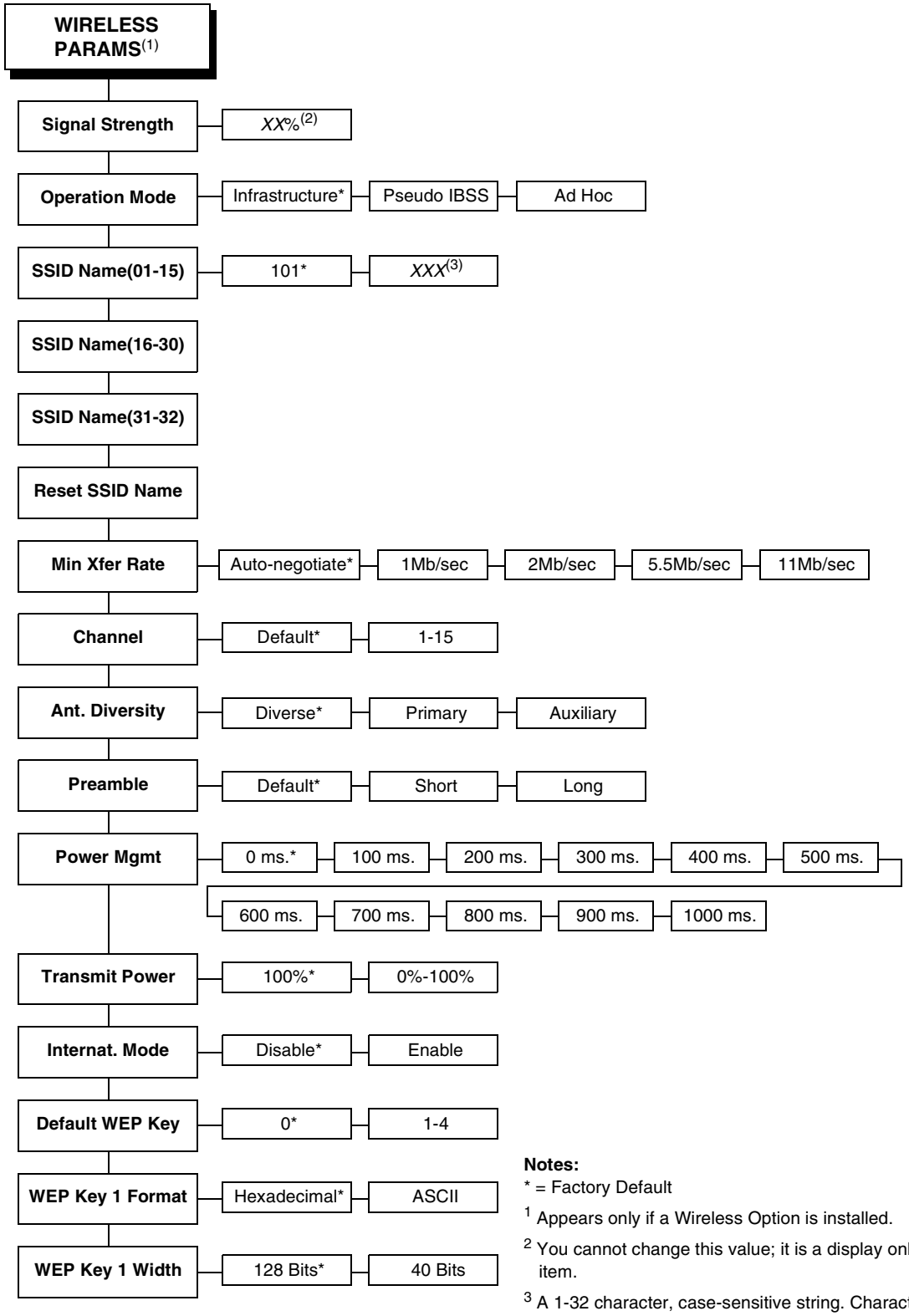
This item is the Manufacturer's Assigned Number, and is unique for the NIC and the Wireless option. It is read-only.

DHCP

You can enable/disable the DHCP protocol using this option, but consult your administrator for the appropriate setting.

The options are Disable (the factory default) and Enable.

WIRELESS PARAMS



Continued at the top of next page

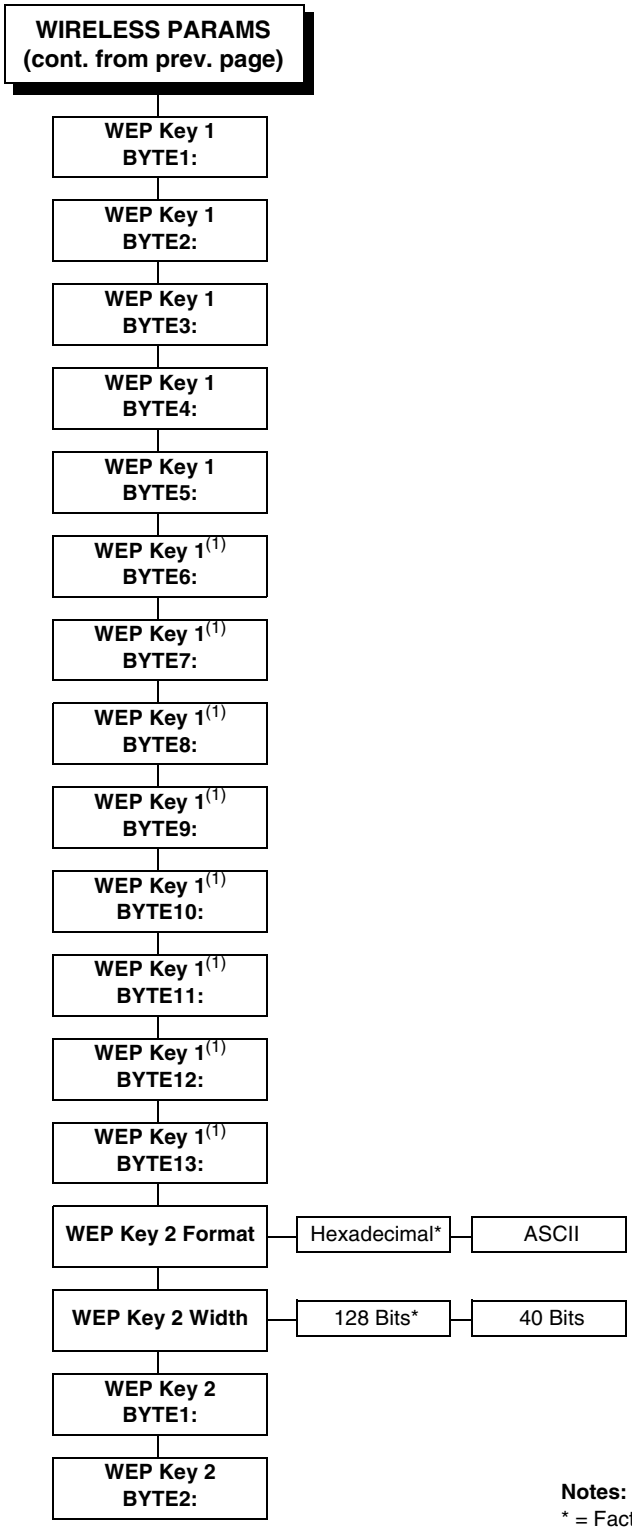
Notes:

* = Factory Default

[1] Appears only if a Wireless Option is installed.

[2] You cannot change this value; it is a display only item.

[3] A 1-32 character, case-sensitive string. Characters can be alphanumeric, symbols, or spaces.

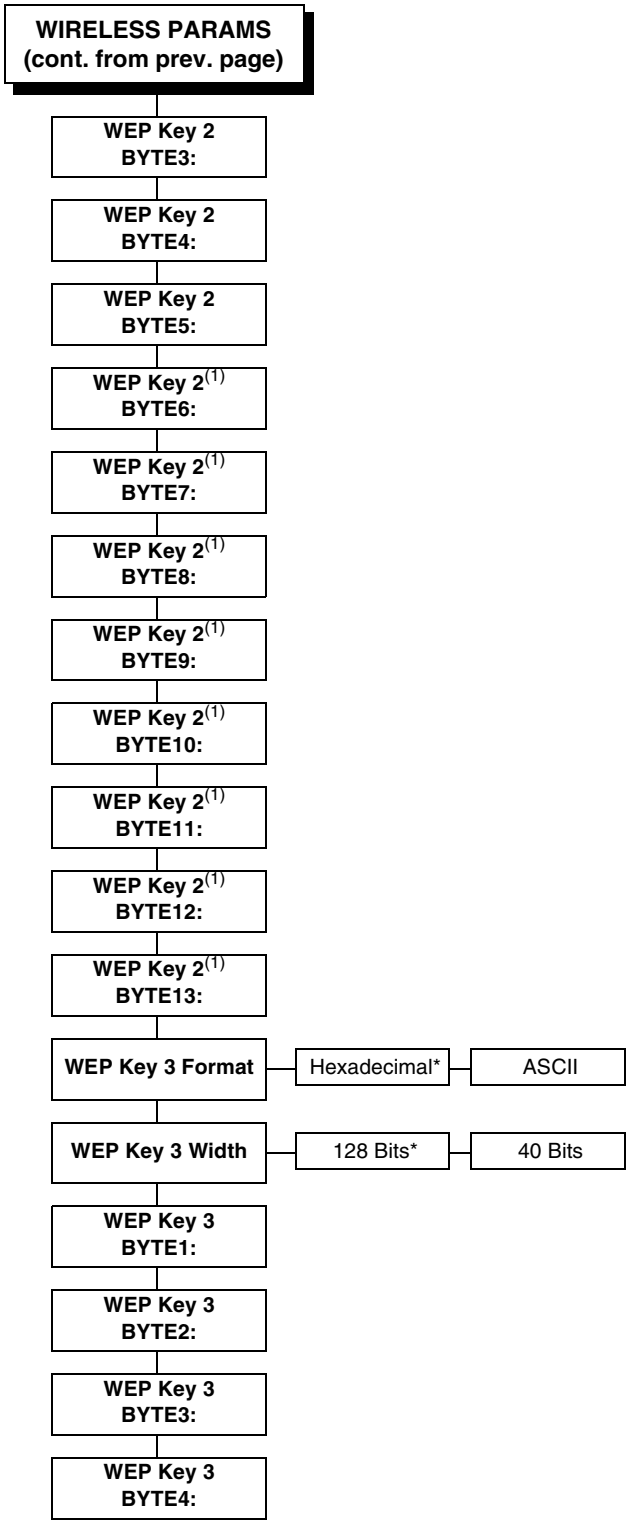


Continued at the top of next page

Notes:

* = Factory Default

[1] Appears only if “WEP Key 1 Width” is set to 128 Bits.



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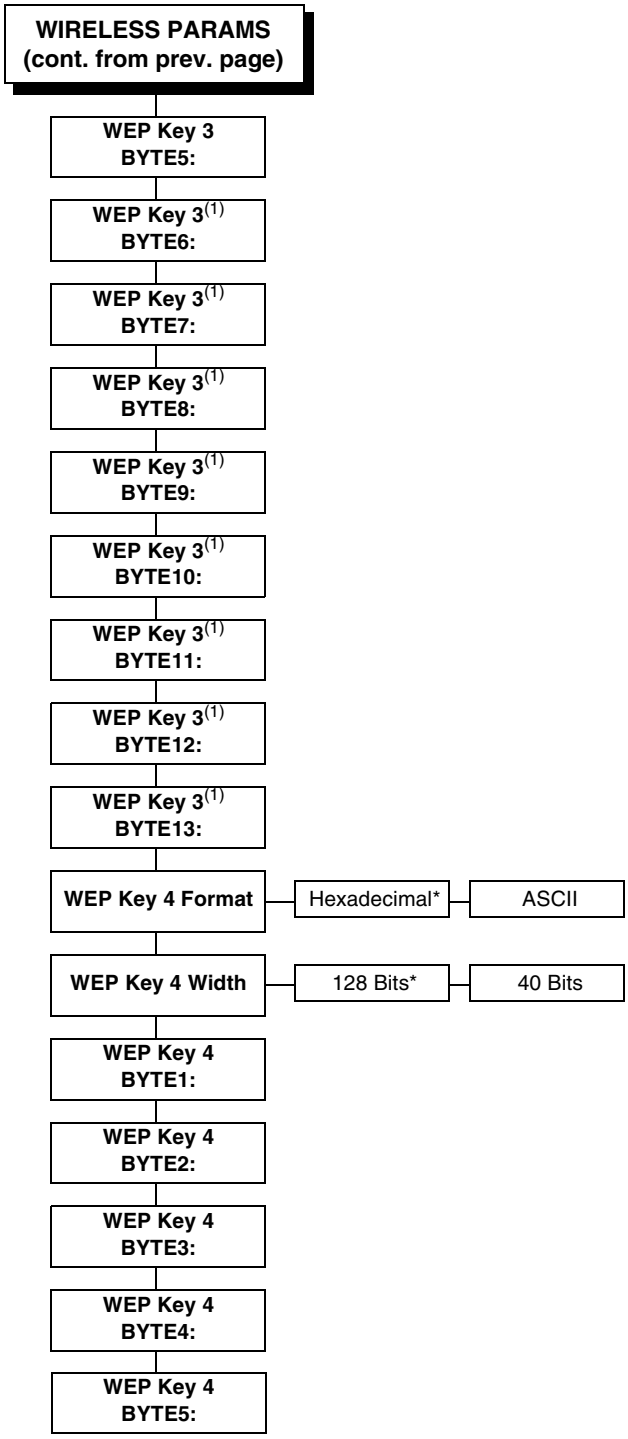
Notes:

* = Factory Default

[1] Appears only if “WEP Key 2 Width” is set to 128 Bits.



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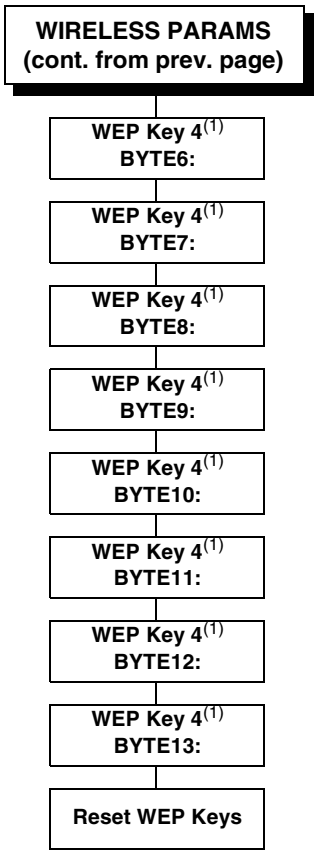
Notes:

* = Factory Default

[1] Appears only if “WEP Key 3 Width” is set to 128 Bits.



Notes:

[1] Appears only if “WEP Key 4 Width” is set to 128 Bits.

WIRELESS PARAMS Submenus

Signal Strength

This menu displays the strength of the wireless signal.

NOTE: This is a display value only and cannot be changed.

Operation Mode

Allows you to select the way the Wireless option communicates:

- **Infrastructure**. The Wireless option must go through an Access Point.
- **Pseudo IBSS**. Proprietary, peer-to-peer communication (without an Access Point). The two peers must be specific to one manufacturer.
- **Ad Hoc**. Standard, peer-to-peer communication (without an Access Point). The two peers can be from different manufacturers.

The factory default is Infrastructure.

SSID Name

A 1-32 character, case-sensitive string that identifies the Extended Service Set Identification (ESS_ID) network the unit is part of. (ESS_ID is also called NET_ID.) These characters can be alphanumeric, symbols, or spaces.

Reset SSID Name

Allows you to reset the SSID name.

Min Xfer Rate

Allows you to set the minimum speed at which the Wireless Option will accept a connection (in millions bits per second). The options are Auto-negotiate, 1Mb/sec., 2Mb/sec., 5.5Mb/sec., and 11Mb/sec.

The factory default is Auto-negotiate.

Channel

Allows you to select the RF channel.

The options are Default (the factory default) and 1-15.

Ant. Diversity

The type of antenna used:

- **Diverse**. Select when you want to use the antenna with the best reception.
- **Primary**. Select when you want to use the Primary antenna on the server.
- **Auxiliary**. Select when you want to use the Auxiliary antenna on the server.

The factory default is Diverse.

Preamble

The length of the preamble in transmit packets.

- **Default**. The Wireless option automatically determines the length.
- **Short**. For newer printers which can handle higher transfer rate speeds.
- **Long**. For older printers, which cannot handle higher transfer rate speeds.

The factory default is Default.

Power Mgmt

This allows you to set power-save mode and sleep time. A value specifying the sleep time in milliseconds will be provided. If set to zero, power-save mode will be disabled.

The range is 0-1000 ms., and the factory default is 0 ms.

Internat. Mode

When enabled, the Wireless option adapts to international frequency requirements in Europe.

The options are Disable (the factory default) and Enable.

Transmit Power

The power level as a percentage of full power.

The range is 0 - 100%, and the factory default is 100%.

Default WEP Key

This feature enables you to encrypt (scramble) information for security purposes. With this feature, you can set up to four encryption keys, in either ASCII or hexadecimal format, and in either 40 or 128 bits. (The more bits you choose, the more difficult it will be to decode the information.)

NOTE: None of the WEP Key Configuration menus display on the configuration printout.

WEP Key Format

Allows you to format the WEP keys in ASCII or hexadecimal code.

The factory default is Hexadecimal.

WEP Key Width

This is the encryption strength. The options are 40 Bits and 128 Bits; 40 bits are weaker and 128 bits are stronger.

NOTE: If you select 40 bits, the WEP Key BYTE6 through WEP Key BYTE13 menus will not display.

The factory default is 128 bits.

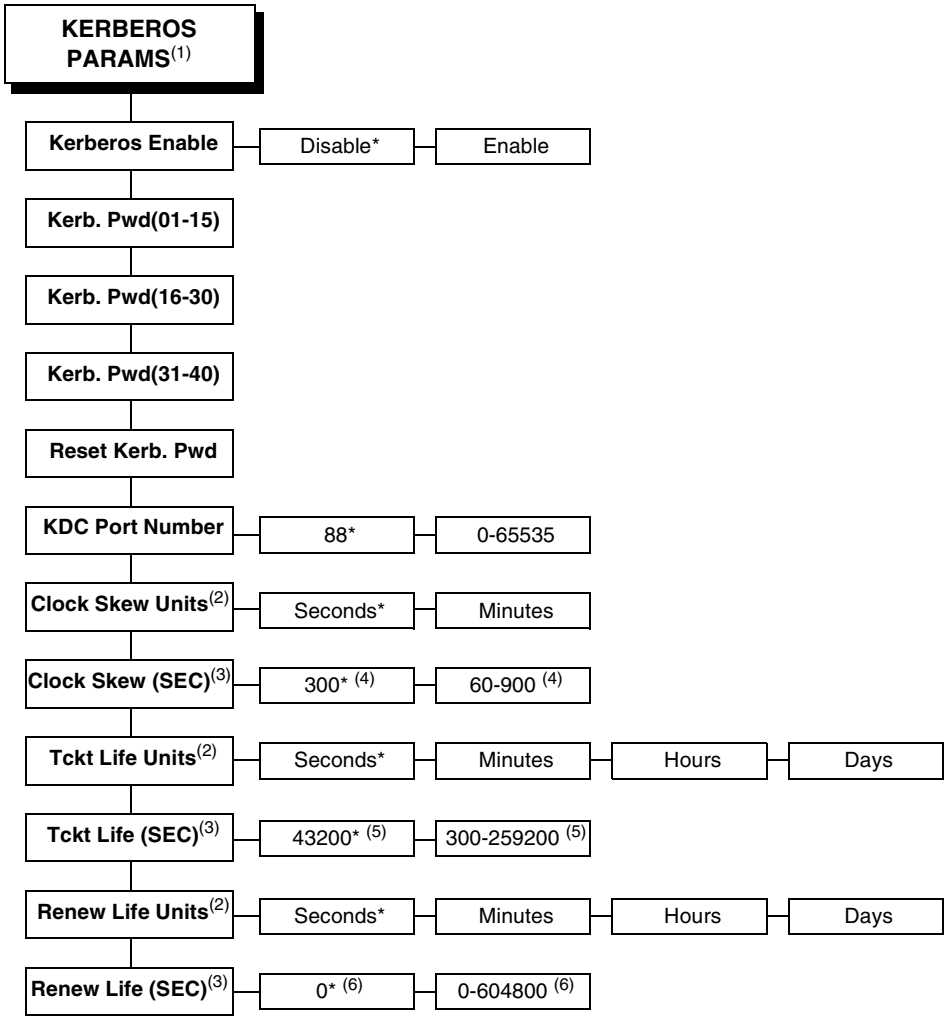
WEP Key BYTE1 through BYTE13

These are the individual characters of the encryption key.

Reset WEP Keys

Allows you to reset all four WEP keys (WEP Key 1 through WEP Key 4) at one time.

KERBEROS PARAMS



Notes:

* = Factory Default

1 This menu displays only if a Symbol RF card is installed.

2, 3 These two menus work in conjunction. Whatever submenu name is selected in the first menu will display on the second menu. For example if you select Minutes, (MIN) will display in the name of the second menu.

4 The factory default and values depend on the unit selected in the Clock Skew Units menu. See “Clock Skew (SEC)” on page 284 for more information.

5 The factory default and values depend on the unit selected in the Tckt Life Units menu. See “Tckt Life (SEC)” on page 285 for more information.

6 The factory default and values depend on the unit selected in the Renew Life Units menu. See “Renew Life (SEC)” on page 285 for more information.

KERBEROS PARAMS Submenus

Kerberos Enable

- **Disable**. Disables Kerberos authentication in the wireless network interface.
- **Enable**. Enables Kerberos authentication in the wireless network interface.

The factory default is Disable.

Kerb. Pwd(01–15)

First 15 characters of the Kerberos password (maximum number of characters is 40).

Kerb. Pwd(16–30)

Characters 31 to 40 of the Kerberos password (maximum number of characters is 40).

Kerb. Pwd(31–40)

Characters 31 to 40 of the Kerberos password (maximum number of characters is 40).

Reset Kerb. Pwd

Resets Kerberos password to an empty string.

KDC Port Number

KDC (Key Distribution Center) port number is the 2-byte UDP/TCP port used for Kerberos Communication.

The range is 0-65535, and the factory default is 88.

Clock Skew Units

The options are Seconds and Minutes, and the factory default is Seconds.

Clock Skew (SEC)

Sets the maximum allowable amount of time in seconds (SEC) or minutes (MIN), as specified by the Clock Skew Units, that Kerberos authentication will tolerate before assuming that a Kerberos message is invalid.

- **Seconds:** The range is 60-900, and the default is 300.
- **Minutes:** The range is 1-15, and the default is 5.

NOTE: Whatever submenu is selected in Clock Skew Units will display on the Clock Skew (SEC) menu. For example, if you select Minutes, the Clock Skew (SEC) menu name will change to Clock Skew (MIN).

Tckt Life Units

Ticket lifetime unit in Seconds, Minutes, Hours, or Days.

The factory default is Seconds.

Tckt Life (SEC)

Sets the maximum allowable amount of time in Seconds (SEC), Minutes (MIN), Hours (HR), or Days (DAY), as specified by the Tckt Life Units, that a ticket obtained from the Kerberos server is valid before getting a new one.

- **Seconds:** The range is 300-259200, and the default is 43200.
- **Minutes:** The range is 5-4320, and the default is 720.
- **Hours:** The range is 1-72, and the default is 12.
- **Days:** The range is 1-3, and the default is 1.

NOTE: Whatever submenu is selected in Tckt Life Units will display on the Tckt Life (SEC) menu. For example, if you select Hours, the Tckt Life (SEC) menu name will change to Tckt Life (HR).

Renew Life Units

Renew lifetime unit in Seconds, Minutes, Hours, or Days.

The factory default is Seconds.

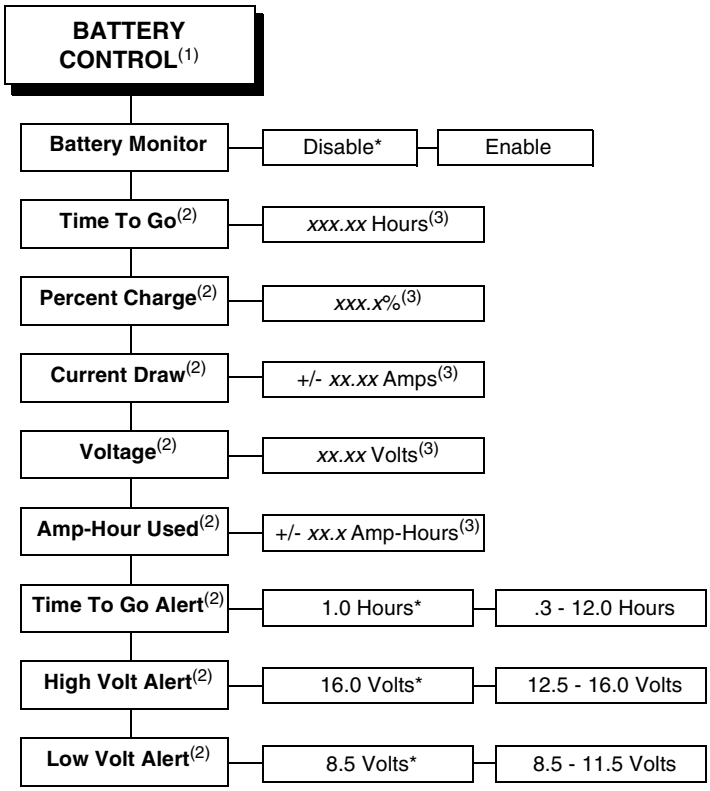
Renew Life (SEC)

Sets the maximum allowable amount of time in Seconds (SEC), Minutes (MIN), Hours (HR) or Days (DAY), as specified by the Renew Life Units, before warning that a new Kerberos password is needed.

- **Seconds:** The range is 0-604800, and the default is 0.
- **Minutes:** The range is 0-10080, and the default is 0.
- **Hours:** The range is 0-168, and the default is 0.
- **Days:** The range is 0-7, and the default is 0.

NOTE: Whatever submenu is selected in Renew Life Units will display on the Renew Life (SEC) menu. For example, if you select Days, the Renew Life (SEC) menu name will change to Renew Life (DAY).

BATTERY CONTROL



Notes:

* = Factory Default

[1] Does not appear if the CTHI option is installed.

[2] Available only when you select “Enable” in the Battery Monitor submenu (in the BATTERY CONTROL menu).

[3] You cannot change this value; it is a display only item.

BATTERY CONTROL Submenus

Battery Monitor

- **Disable.** When set to Disable, the other Battery Control menus do not display. The Serial Port is restored to normal use, and the Serial Port menu displays.
- **Enable.** When set to Enable, the other Battery Control menus display. The Serial Port is reserved for monitoring the power cart, and the Serial Port menu does not display.

  When Battery Monitoring has been enabled and the printer is online, the second line of the LCD message displays the time remaining as “Batt *xxx.xx* Hrs.”

The factory default is Disable.

Time To Go

This displays the Time to Go status on the LCD in hundredths of an hour.

NOTE: This menu is available only when you select “Enable” in the Battery Monitor submenu. When the Power Cart charger is connected to an AC outlet, the Time To Go will be 0.00 Hours. This message updates approximately every two minutes.

Percent Charge

This displays the Charge Percentage in tenths of a percent.

NOTE: This menu is available only when you select “Enable” in the Battery Monitor submenu.

Current Draw

This displays the Current Draw in hundredths of an amp.

NOTE: This menu is available only when you select “Enable” in the Battery Monitor submenu.

Voltage

This displays the Voltage in hundredths of a volt.

NOTE: This menu is available only when you select “Enable” in the Battery Monitor submenu.

Amp-Hour Used

This displays the Amp-Hour Used in tenths of an amp hour.

NOTE: This menu is available only when you select “Enable” in the Battery Monitor submenu.

Time To Go Alert

This allows you to set the minimum Time to Go value for determining when a “RECHARGE BATTERY” warning occurs. When the printer receives a status from the battery that is less than the value of the Time To Go menu, the “RECHARGE BATTERY” warning displays on the LCD.

The range is .3 - 12.0, and the factory default is 1.0 Hours.

NOTE: This menu is available only when you select “Enable” in the Battery Monitor submenu.

High Volt Alert

This allows you to set the maximum voltage for determining when a “BATT HIGH VOLT” warning occurs. When the printer receives a status from the battery that is greater than the value of the High Volt menu, the “BATT HIGH VOLT” warning displays on the LCD.

The range is 12.5 - 16.0 Volts, and the factory default is 16.0 Volts.

NOTE: This menu is available only when you select “Enable” in the Battery Monitor submenu.

Low Volt Alert

This allows you to set the minimum voltage for determining when a “BATT LOW VOLT” warning displays on the LCD. When the printer receives a status from the battery that is less than the value of the Low Volt menu, the “BATT LOW VOLT” warning displays on the LCD.

The range is 8.5 - 11.5 Volts, and the factory default is 8.5 Volts.

NOTE: This menu is available only when you select “Enable” in the Battery Monitor submenu.

Downloading Emulation And Operating System Software

Flash Memory

Flash memory retains its contents when printer power is turned off. (Compare this to RAM, which loses its contents when power is removed.) Flash memory is contained in an 80-pin 4MB (or optional 10MB) SIMM (Single Inline Memory Module) at location J38 on the controller board.

Printer emulation and operating system software are loaded into flash memory at the factory, but you will install software in some situations:

- The IPDS or Expansion-C/T options are added after the printer is installed
- A printer software upgrade is installed
- The printer controller board has been replaced
- The flash memory SIMM has been replaced

Emulation and operating system software are stored on a CD. You will copy the appropriate file to your computer's hard disk, then download that file to the printer.

IMPORTANT **When downloading emulation and operating system software to the printer, all other optional font files, customer-supplied logos, setup files, and TIFF files will be erased. You will then need to reload those files. Before starting a download procedure, be sure that you have all the necessary files on hand.**

You can load software through the serial, parallel, or Ethernet NIC port of the printer:

- If you are going to load memory through the serial or parallel port of the printer, see "Downloading Emulation And Operating System Software" on page 289. The load commands are different, depending on the printer port you use. These differences are explained in the note following step 22, page 292.
- If the printer has the NIC installed, see "Downloading Software Through The Network Interface Card (NIC)" on page 293.

Downloading Software Through The Serial Or Parallel Port

1. Make a printout of all saved configurations. (Installing new software erases all saved configurations. You will use the printouts to restore the printer configurations.)
2. Set the printer power switch to O (Off).
3. If the printer is already connected to the serial or parallel port of an IBM-compatible computer running the PC-DOS™ or MS-DOS operating system, go to step 9. If not, go to step 4.
4. Unplug the AC power cord from the printer.
5. Disconnect all data input cables from the printer interfaces.
6. Connect a parallel data cable to the LPT1 port or a serial data cable to the COM1 port of an IBM-compatible computer running the PC-DOS or MS-DOS operating system.

NOTE: You can connect the cable to the LPT2 port if the LPT1 port is already in use. The load commands are different if you use this port, as described in the note after step 22.

7. Connect the data cable to the appropriate I/O port of the printer.
8. Plug the AC power cord into the printer.
9. On the printer control panel, press and hold down the ⁝☰ and ↓ keys. Without releasing the keys, power the printer on. Continue holding down the ⁝☰ and ↓ keys.
10. When you see “TESTING HARDWARE PLEASE WAIT” on the LCD, release the ⁝☰ and ↓ keys.
11. Wait until you see “WAITING FOR PROGRAM DOWNLOAD” on the LCD before proceeding. This can take up to 30 seconds to appear, depending on the emulations and interfaces installed in the printer.
12. Press the **+** key. “SELECT DOWNLOAD PORT=CENTRONICS” appears on the LCD.

NOTE: The default port is CENTRONICS; this is the standard load through the parallel port. If you want to use the default, continue at step 14.

13. Press **+** again to cycle through the download ports available in the printer:

    RS232-9600 (RS-232 serial, 9600 baud)
    RS232-19.2K (RS-232 serial, 19200 baud)
    RS232-38.4K (RS-232 serial, 38400 baud)
    RS232-115K (RS-232 serial, 115000 baud)
    RS422-9600 (RS-422 serial, 9600 baud)
    RS422-19.2 (RS-422 serial, 19200 baud)
    RS422-38.4K (RS-422 serial, 38400 baud)
    RS422-115K (RS-422 serial, 115000 baud)
    DEBUG

14. When the printer download port you want to use is displayed on the LCD, press ↵. "WAITING DOWNLOAD / PORT = <*your selection*>" appears on the display.
15. Using Windows Explorer, create a directory named **download** at the root level of your C: hard drive.
16. Insert the printer emulation software CD into your computer.

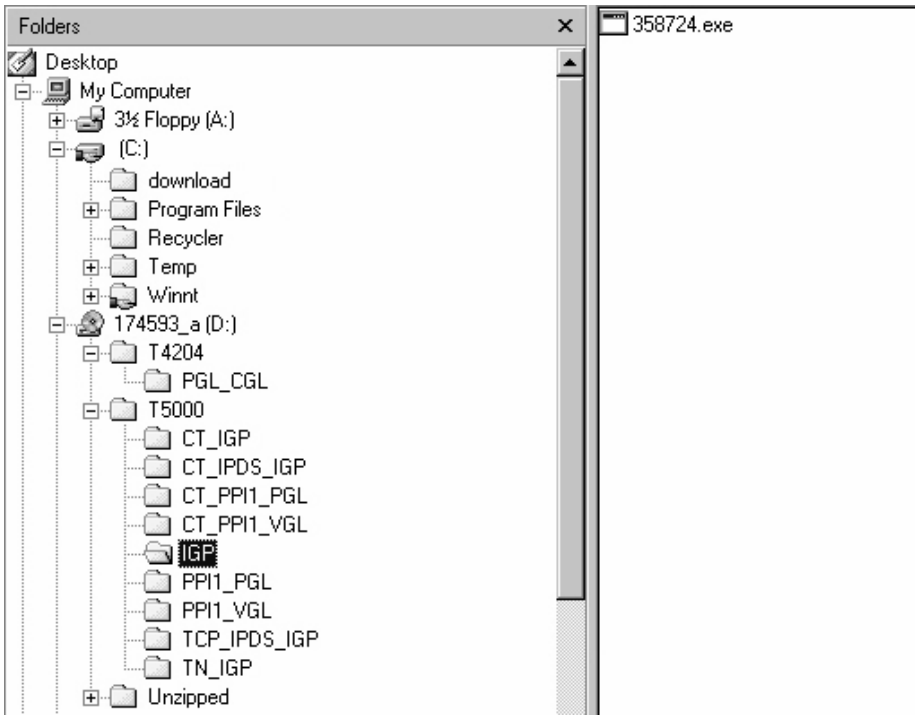


Figure 7. Navigating to the Appropriate Emulation File on the CD

17. Using Windows Explorer, navigate to the appropriate file on the CD based on the printer model number and desired emulation, e.g., T5000 ▸ IGP. (See Figure 7.)
18. Make note of the file name, which is a six digit number plus **.exe**, e.g., 123456.exe.
    This is the file you will download into the printer.

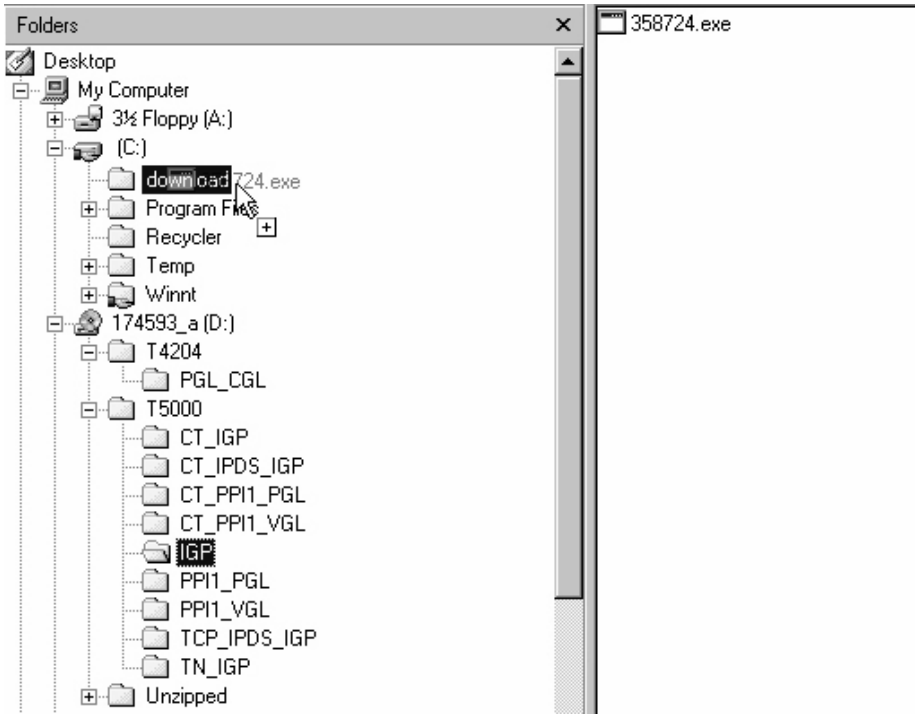


Figure 8. Copying the Emulation File to the Download Directory

19. Copy the file to the download directory.

NOTE: You may need to hold **Ctrl** to make sure a **+** appears to the right of the pointer. (See Figure 8.)

20. Start a command prompt session. (The Start Menu icon is usually labeled MS-DOS Prompt or Command Prompt.)

21. At the command prompt type:
    `C:`<Enter>
    `cd \download`<Enter>

22. At the command prompt on the computer type:
    ***`filename`*`.exe -pb`**<Enter>
    where *filename*.exe is the file name you noted in step 18. This command decompresses the file on the hard drive and copies it as a binary file into the flash memory on the printer controller board.

NOTE: If you are loading the file using the LPT2 port on the computer, enter the following command:
***`filename`*`.exe -pb2`** <Enter>

The 9600 baud rate is the only selection older versions of MS-DOS can use. The baud rate information entered in the following commands must match the selection you made in step 13.

If you are loading the file through the printer serial port, enter the following commands:
`mode COM1:9600,N,8,1,P`<Enter>
***`filename`*`.exe -pbc1`**<Enter>

CAUTION **Do not interrupt the downloading process once it has started. Interrupting a download will damage the flash memory on the controller board and NIC card.**

While the file is copied into memory, the printer LCD informs you of the load process and status.

23. When the new program has successfully loaded into memory and the printer has reset itself, set the printer power switch to O (Off).
24. Unplug the AC power cord from the printer.
25. Remove the CD from the host computer and store it with the printer.
26. Power off the computer.
27. If you had to install a data cable to the computer and printer in step 6, disconnect it from the computer and printer.
28. If required, reconnect the data input cable(s) to the printer.

Using the configuration printout(s) you made in step 1, reconfigure the printer and reload any optional font files.

Downloading Software Through The Network Interface Card (NIC)

1. Make a printout of all saved configurations. (Installing new software erases all saved configurations. You will use the printouts to restore the printer configurations.)
2. Set the printer power switch to O (Off).
3. On the printer control panel, press and hold down the ⋮☰ and ↓ keys. Without releasing the keys, power the printer on. Continue holding the ⋮☰ and ↓ keys down.
4. When you see “TESTING HARDWARE PLEASE WAIT” on the LCD, release the ⋮☰ and ↓ keys.
5. Wait until you see “WAITING FOR PROGRAM DOWNLOAD” on the LCD before proceeding. This can take up to 30 seconds to appear, depending on the emulations and interfaces installed in the printer.
6. Using Windows Explorer, create a directory named **download** at the root level of your C: hard drive.
7. Insert the printer emulation software CD into your computer.

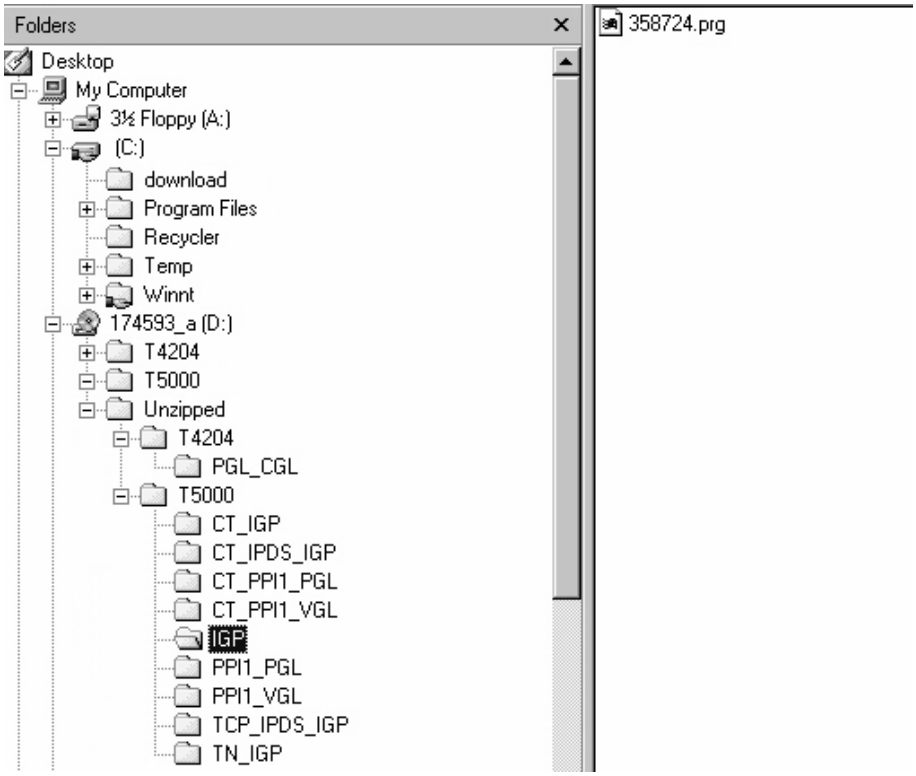


Figure 9. Navigating to the Appropriate Emulation File on the CD

8. Using Windows Explorer, navigate to the appropriate file on the CD (using the Unzipped directory) based on the printer model number and desired emulation, e.g., Unzipped ▸ T5000 ▸ IGP. (See Figure 9.)

IMPORTANT **You must use the Unzipped directory, since this contains the uncompressed files necessary for NIC download.**

9. Make note of the file name, which is a six digit number plus **.prg**, e.g., 123456.prg.
   This is the file you will download into the NIC.
10. Copy the file to the download directory.
11. Start a command prompt session. (The Start Menu icon is usually labeled MS-DOS Prompt or Command Prompt.)
12. At the command prompt type:

    `C:`<Enter>
    `cd \download`<Enter>
13. Start the FTP protocol by typing:

    `ftp` ***`xxx.xxx.xxx.xxx`***<Enter>
    (where *xxx.xxx.xxx.xxx* represents the IP Address of the printer.)

14. Log in to the printer by typing:

    root<Enter>

    You are given a password prompt.

NOTE: The default is no password. If the FTP program requires a password, contact your system administrator.

15. At the password prompt, press <Enter>.
16. Once logged in, type the following sequence at the command prompt to download the *filename*.prg file to the printer:

    cd dest<Enter>
    cd d1prn<Enter>
    bin<Enter>
    put *filename*.prg<Enter>
    (where *filename*.prg is the file name you noted in step 9.)

CAUTION **Do not interrupt the downloading process once it has started. Interrupting a download will damage the flash memory on the controller board and NIC card.**

17. As the file downloads, the FTP program shows the progress as a percentage. Once the download is complete, exit out of the FTP program by typing:

    quit<Enter>

18. When the new program has successfully loaded into flash memory and the printer has reset itself, set the printer power switch to O (off).
19. Unplug the AC power cord from the printer.
20. Remove the CD from the host computer and store it with the printer.
21. Using the configuration printout(s), reconfigure the printer and reload any optional font files.

Downloading Optional Font Files To Flash Memory

Optional font files are stored on a 3.5 inch floppy diskette that contains file names comprised of a part number with a **.dwn** extension. You will insert the diskette in your IBM-compatible computer and use either the parallel or serial port to download the desired font file(s) to the printer's flash memory.

1. Set the printer power switch to O (off).
2. Connect a parallel data cable to the LPT1 port or a serial cable to the COM1 port of an IBM-compatible computer running the PC-DOS or MS-DOS operating system.

NOTE: You can connect the cable to the LPT2 port on the computer if the LPT1 port is already in use. The load commands are different if you use this port, as described in the notes after step 15.

3. Verify that the data cable is connected to the appropriate I/O port on the printer and to the host computer.
4. Power on the computer and allow it to boot up.

5. On the printer control panel, press and hold down the ⋮☰ and ↓ keys while powering the printer on. Continue holding the ⋮☰ and ↓ keys down.
6. When you see “WAITING FOR PROGRAM DOWNLOAD” on the LCD, release the ⋮☰ and ↓ keys.

NOTE: The printer default port is CENTRONICS; if you want to use this port, continue to step 15.

7. Press the **+** key; “SELECT DOWNLOAD PORT = CENTRONICS” appears on the LCD.
8. Press the **+** key again to cycle through the download ports available in the printer:

   RS232-9600 (RS-232 serial, 9600 baud)
   RS232-9600 (RS-232 serial, 19200 baud)
   RS232-9600 (RS-232 serial, 38400 baud)
   RS232-9600 (RS-232 serial, 115000 baud)
   RS422-9600 (RS422 serial, 9600 baud)
   RS422-9600 (RS422 serial, 19200 baud)
   RS422-9600 (RS422 serial, 38400 baud)
   RS422-9600 (RS422 serial, 115000 baud)
   DEBUG
9. When the printer download port you want to use is displayed on the LCD, press ↵. “WAITING DOWNLOAD / PORT” = <*your selection*> appears on the display.
10. Insert the optional font diskette into diskette drive A (or B) of the computer.
11. Start a command prompt session. (The Start Menu icon is usually labeled MS-DOS Prompt or Command Prompt.)
12. Make the diskette drive the active drive by typing:

    `A:`<Enter> (if the diskette is in drive B, type **`B:`**<Enter>)
13. List the contents of the diskette at the command prompt by typing the following:

    `dir`<Enter>

    You will see a directory listing containing files with a **.dwn** extension, e.g., 94021.dwn, 94022.dwn, 94023.dwn.
14. Make note of the file name with the **.dwn** extension of each file you want to download to the printer.

NOTE: The numeric portion of the file name will match the numbers of the font typefaces listed in Appendix E of the PGL and VGL Programmer’s Reference Manuals and provide you with a description and print sample of the typeface.

15. At the command prompt type:

    copy /b *filename*.dwn LPT1<Enter>
    (where *filename*.dwn is file name you noted in step 14.)

NOTE: If you are loading the file using the LPT2 port on the computer, type the following command:

copy /b *filename*.dwn LPT2<Enter>
(where *filename*.dwn is a file you noted in step 14.)

If you are loading the file using the serial port on the computer, type the following commands:

mode COM1:9600,N,8,1,P<Enter>
copy /b *filename*.dwn COM1<Enter>
(where *filename*.dwn is a file you noted in step 14.)

The 9600 baud rate is the only selection older versions of MS-DOS can use. The baud rate information entered in the above commands must match the selection you made in step 8.

You can download the optional font files one at a time by entering one file name per the **copy** command or you can copy multiple files in one **copy** command.

To download one file at a time, enter the following at the command prompt:

copy /b *filename*.dwn LPT1<Enter>

To download multiple files, enter the following at the command prompt, for example:

copy /b *filename1*.dwn+*filename2*.dwn+...LPT1<Enter>

16. While the font file is copied into flash memory, the printer LCD informs you of the load process and status. When the new file is successfully loaded into memory, the printer will reset itself and go online.
17. To verify that the optional fonts have been downloaded:
    a. Perform a configuration printout.

    — OR —

    b. Select **PRINTER CONTROL ▸ View File List**. The new file names will appear with the same part number file name you downloaded, but with an **.sf** extension.

NOTE: The optional font typefaces cannot be selected via the printer control panel. They can only be selected via a software command from the host.

18. Press the **PAUSE** key to place the printer online and return the printer to normal operation.

Downloading True Type Fonts

There are several ways to download TrueType fonts to your Thermaline printer.

Printronix Windows Driver

Load the Printronix Windows driver (provided with your printer on the Manuals and Utilities CD). Follow the instructions within the driver to download and access TrueType fonts.

Create and Send Download File - Online (PGL only)

A TrueType font can be converted to a downloadable form by appending a header to the file as described in the *PGL Programmer's Reference Manual*, Font Load command. After conversion, the file can be copied to the appropriate I/O port of the printer while it is online, just like any other print file (for example: copy/b *filename*.ext lpt1).

Create and Send Download File - Download Mode

Create a download file as described above. Power up the printer as described in the "Downloading Optional Font Files To Flash Memory" section. Substitute the name of the file you just created for "*FILENAME*.DWN."

Using Downloaded True Type Fonts

If downloaded from the Printronix Windows driver, TrueType fonts can be accessed by any program using the driver as native fonts. Many WYSIWYG bar code labelling application programs also provide the utility to download and access TrueType fonts as printer resident (as opposed to bitmapped images). Otherwise, use the FONT command as described in the *PGL Programmer's Reference Manual* to access the downloaded fonts.

4 *Interfaces*

Overview

This chapter describes the host interfaces provided with the printer. The printer interface is the point where the data line from the host computer plugs into the printer. The interface processes all communications signals and data to and from the host computer. Plus, with the Auto Switching feature, you can configure the printer to accept several interfaces at the same time.

In addition to descriptions for the multi-line interfaces, this chapter also provides instructions for configuration of terminating resistors for the parallel interfaces.

Auto Switching

This feature gives the printer the ability to handle multiple data streams sequentially. With Auto Switching, the printer can service hosts attached to the serial, parallel, coax and twinax ports as if they were the only interface connected.

For example, if the host computer sends one print job to the RS-232 serial port and a separate print job to the IEEE 1284 parallel port, the printer's Auto Switching is able to handle both jobs, in the order they were received, without the user having to reconfigure the selected interface between jobs.

Standard Host Interfaces

- Centronics parallel
- IEEE 1284 parallel bidirectional
- High Speed Serial Port (RS-232/RS-422)

Optional Host Interfaces

- Coax / Twinax
- Ethernet 10/100Base-T

Centronics Parallel Interface

Table 11. Centronics Interface Connector Pin Assignments

Input Signals		Output Signals		Miscellaneous	
Signal	**Pin**	**Signal**	**Pin**	**Signal**	**Pin**
DATA LINE 1	2	ACKNOWLEDGE	10	CHASSIS GROUND	17
Return	20	Return	28		
DATA LINE 2	3	ONLINE	13	GROUND	30
Return	21	Return	28		
DATA LINE 3	4	FAULT	32	Spares	14
Return	22	Return	29		
DATA LINE 4	5	PAPER EMPTY	12	No Connection	34,35,
Return	23	Return	28		36
DATA LINE 5	6	BUSY	11	+5 Volts	18
Return	24	Return	29		
DATA LINE 6	7				
Return	25				
DATA LINE 7	8				
Return	26				
DATA LINE 8	9				
Return	27				
DATA STROBE	1				
Return	19				
PAPER INSTRUCTION	15				
Return	29				
PRIME	31				
Return	30				

NOTE: The length of the data cable from the host computer to the printer must not exceed 15 feet (5 meters).

Centronics Parallel Interface Signals

Table 12. Centronix Parallel Interface Signals

Signals	Purpose
Data Lines 1 through 8	Provide eight standard or inverted levels from the host that specify character data, plot data, or a control code. Data Line 8 allows access to the extended ASCII character set. You may enable or disable this line via the Data Bit 8 parameter on the Centronics Parallel submenu.
Data Strobe	Carries a low true, 100 ns minimum pulse from the host that clocks data into the printer.
Acknowledge	A low true pulse from the printer indicating the character or function code has been received and the printer is ready for the next data transfer.
Online	A high true level from the printer to indicate the printer is ready for data transfer and the PAUSE key on the control panel has been activated. When the printer is in online mode, it may accept data from the host.
Paper Empty (PE)	A high true level from the printer to indicate the printer is in a paper empty or paper jam fault.
Busy	A high true level from the printer to indicate the printer cannot receive data.
Prime	A high true level from the host to indicate the printer should perform a warm start (printer is reset to the power-up configuration values).
Paper Instruction (PI)	Carries a VFU signal from the host with the same timing and polarity as the data line.
Fault	A low true level from the printer indicates a printer fault.

IEEE 1284 Parallel Interface

The IEEE 1284 supports three operating modes, which are determined by negotiation between the printer and the host.

Compatibility Mode

This mode provides compatibility with Centronics-like host I/O (see Table 11). Data is transferred from the host to the printer in 8-bit bytes over the data lines.

Compatibility Mode can be combined with Nibble and Byte Modes to provide bidirectional communication.

Nibble Mode

Eight bits equals one byte. When a byte of data is sent to the printer, the eight bits are sent over eight data lines.

Some devices cannot send data over their eight data lines. To bypass this, the IEEE 1284 permits data to be sent as half a byte over four status lines. (Half a byte equals one nibble.) Two sequential four-bit nibbles are sent over the lines.

Data is transferred from printer to host in four-bit nibbles over the status lines, and the host controls the transmission.

Byte Mode

The printer and host send data to each other along eight data lines (one bit per line).

If bidirectional communication is supported by the printer and the host, the host will take control of the data transfer.

Signals

Table 13 lists each of the signals associated with the corresponding pins on the IEEE 1284 interface. Descriptions of the signals follow.

Table 13. IEEE 1284 Signals

Pin	Source of Data	Type of Mode		
		Compatible	Nibble	Byte
1	Host	nStrobe	HostClk	Host/Clk
2	Host/Printer	Data 1 (LSB)		
3	Host/Printer	Data 2		
4	Host/Printer	Data 3		
5	Host/Printer	Data 4		
6	Host/Printer	Data 5		
7	Host/Printer	Data 6		
8	Host/Printer	Data 7		
9	Host/Printer	Data 8 (MSB)		
10	Printer	nAck	PtrClk	PtrClk
11	Printer	Busy	PtrBusy	PtrBusy
12	Printer	PError	AckDataReq	AckDataReq
13	Printer	Select	Xflag	Xflag
14	Host	nAutoFd	Host Busy	HostAck
15		Not Defined		
16		Logic Grid		
17		Chassis Grid		
18	Printer	Peripheral Logic High		
19		Signal Ground (nStrobe)		
20		Signal Ground (Data 1)		
21		Signal Ground (Data 2)		
22		Signal Ground (Data 3)		
23		Signal Ground (Data 4)		
24		Signal Ground (Data 5)		
25		Signal Ground (Data 6)		

Table 13. IEEE 1284 Signals (continued)

Pin	Source of Data	Type of Mode		
		Compatible	Nibble	Byte
26		Signal Ground (Data 7)		
27		Signal Ground (Data 8)		
28		Signal Ground (PError, Select, nAck)		
29		Signal Ground (Busy, nFault)		
30		Signal Ground (nAutoFd, nSelectIn, nInit)		
31	Host	nInit		
32	Printer	NFault	nDataAvail	aDataAvail
33		Not Defined		
34		Not Defined		
35		Not Defined		
36	Host	nSelectIn	1284 Active	1284 Active

NOTE: The length of the data cable from the host computer to the printer should not exceed 32 feet (10 meters).

Host Clock / nWrite. Driven by the host. Data is transferred from the host to the printer. When the printer sends data, two types are available. If it is Nibble Mode, the signal is set high. If it is Byte Mode, the signal is set low.

Data 1 through Data 8. These pins are host-driven in Compatibility Mode and bidirectional in Byte Mode. They are not used in Nibble Mode. Data 1 is the least significant bit; Data 8 is the most significant bit.

Printer Clock / Peripheral Clock / Interrupt. Driven by the printer. A signal from the printer indicating the character or function code has been received and the printer is ready for the next data transfer.

Printer Busy / Peripheral Acknowledge / nWait. Driven by the printer. Indicates the printer cannot receive data. (Data bits 4 and 8 in Nibble Mode.)

Acknowledge Data Request / nAcknowledge Reverse. Driven by the printer. Indicates the printer is in a fault condition. (Data bits 3 and 7 in Nibble Mode.)

Xflag. Driven by the printer. A high true level indicating the printer is ready for data transfer and the printer is online. (Data bits 2 and 6 in Nibble Mode.)

Host Busy / Host Acknowledge / NDStrobe. Driven by the host. Activates auto-line feed mode.

Peripheral Logic High. Driven by the printer. When the line is high, the printer indicates all of its signals are in a valid state. When the line is low, the printer indicates its power is off or its signals are in an invalid state.

nReverse Request. Driven by the host. Resets the interface and forces a return to Compatibility Mode idle phase.

nData Available / nPeripheral Request. Driven by the printer. Indicates the printer has encountered an error. (Data bits 1 and 5 in Nibble Mode.)

1284 Active / nAStrobe. Driven by the host. A peripheral device is selected.

Host Logic High. Driven by the host. When set to high, the host indicates all of its signals are in a valid state. When set to low, the host indicates its power is off or its signals are in an invalid state.

nInit. Resets init interface from the host.

Terminating Resistor Configurations

The factory equips the printer with terminating resistors that are used for parallel interface configurations suitable for most applications. The 470 ohm pull-up resistor pack is located at RP2, and the 1K ohm pull-down resistor pack is located at RP1 on the Controller PCBA.

If the values of these terminating resistors are not compatible with the particular interface driver requirements of your host computer, call your printer service representative.

RS-232 And RS-422 Serial Interfaces

NOTE: The RS-232 and RS-422 serial interface circuit characteristics are compatible with the Electronic Industry Association Specifications EIA®-232-E and EIA-422-B.

The RS-232 and RS-422 serial interfaces enable the printer to operate with bit serial devices that are compatible with an RS-232 controller. The input serial data transfer rate (in baud) is selectable from the printer's control panel. Baud rates of 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, and 115200 are available.

NOTE: If you select a baud rate that is greater than 19200, you may need to use RS-422 to prevent data loss. You may also need to increase the Buffer Size in K parameter from the default (1 Kbyte) to improve performance.

The length of the data cable from the host computer to the printer must not exceed 50 feet (15 meters) for RS-232 or 4000 feet (1220 meters) for RS-422. (A copper conductor, twisted-pair telephone cable with a shunt capacitance of 16 pF/foot [52.5 pF/meter] terminated in a 100 ohm resistive load must be used for the RS-422.)

RS-232

Table 14. RS-232 Serial Interface Connector Pin Assignments

Input Signals		Output Signals		Miscellaneous	
Signal	**Pin**	**Signal**	**Pin**	**Signal**	**Pin**
Receive Data (RD)	3	Transmit Data (TD)	2	Chassis Ground	1
Clear To Send (CTS)	5	Request To Send (RTS)	4	Signal Ground	7
Data Set Ready (DSR)	6	Data Terminal Ready (DTR)	20		
Data Carrier Detect (DCD)	8				

Received Data (RD). Serial data stream to the printer.

Transmitted Data (TD). Serial data stream from the printer for transmitting status and control information to the host. Subject to protocol selection.

Request To Send (RTS). Control signal from the printer. Subject to configuration.

Clear To Send (CTS). Status signal to the printer indicating the host is ready to receive data/status signals from the printer.

Data Set Ready (DSR). Status signal to the printer indicating the host is in a ready condition.

Data Carrier Detect (DCD). Status signal to the printer. The ON condition is required for the printer to receive data.

Data Terminal Ready (DTR). Control signal from the printer. Subject to configuration.

RS-422

Table 15. RS-422 Serial Interface Connector Pin Assignments

Input Signals		Output Signals		Miscellaneous	
Signal	**Pin**	**Signal**	**Pin**	**Signal**	**Pin**
- Receive Data (-RD)	15	- Transmit Data (-TD)	19	Chassis Ground	1
+ Receive Data (+RD)	17	+ Transmit Data (+TD)	25	Signal Ground	7

+RD, -RD. Serial data stream differentially received by printer.

+TD, -TD. Differentially driven serial data stream for transmitting status and control information to the host. Subject to protocol selection.

NOTE: ±**RD** and ±**TD** form signal and return paths of a differential line signal.

5 Diagnostics And Troubleshooting

Printer Tests

A sequence of automatic tests is performed during printer power-up. If any faults are detected at that time, a fault message will display.

Before setting the printer for online operation, run the Test Print program. The Test Print program has a number of tests which allow you to check for proper printer operation and print quality.

You can enable the Test Print program from the TEST PRINT key or the DIAGNOSTICS menu. For more information, see page 250.

NOTE: Before attempting to print test labels, you must set up the printer for the type of media installed. See the MEDIA CONTROL menu on page 118 for more information.

Troubleshooting Common Situations

Occasionally, situations occur that require some troubleshooting skill. Possible problem situations and potential solutions are listed in this section. While not every conceivable situation is addressed here, you may find some of these tips helpful. Contact a qualified service technician for problems that persist or are not covered in this section.

Improving Processing Time

Before looking at solutions for decreasing processing time and increasing throughput, it may help to understand what happens during processing. When the printer receives a format command, it enters the label formatting mode. Label formatting requires time to process the label data into the printer buffers.

The time required varies, depending on the complexity of the label format and on the size of the area being printed. Once the data has been mapped into memory, the printer will start printing as many labels as requested by the quantity command. In most cases, there is no delay between labels, however, when using Automatic Label Peel-Off or Tear-Off media handling, the printer stops between each label and waits for the label to be removed.

Data Exchange

Many things can cause data loss or communications problems. This section suggests some ways to isolate these problems and determine their cause.

Handshaking

Handshaking is the exchange of signals between two computers (or a computer and a peripheral input or output device) to indicate the status of the data being transferred. In the serial mode, the printer uses both hardware and software handshaking and transmits both forms simultaneously when the input buffer is full.

The printer can be used with either serial or parallel host interfaces. Parallel interfaces are usually straightforward, with no special settings required. Serial interfaces; however, have a variety of possible communication parameter settings. The two methods of handshaking that can be used, hardware and software, are explained below.

- **Hardware Handshaking**

  This electrical signal is controlled by the logic state on pin 20 of the serial interface connector J2 (at the back of the printer). The signal will go high when the printer is ready to receive data. The signal will go low when the printer is in the busy state, which indicates that the printer input buffer is full and can no longer receive data.

- **Software Handshaking**

  XON and XOFF are software signals that control serial data flow between the printer and the host system. When the printer input buffer is full, the printer transmits an XOFF (CTRL S) character that signals the host to stop sending data. When memory space becomes available in the input buffer, the printer sends an XON (CTRL Q) character, which tells the host that the printer is ready to receive more data.

If the printer appears to have communication problems, the self-test configuration test labels (see page 250) and character hex dump mode (see page 251) should be checked. The tests can help identify printer configuration errors that can cause problems.

Both of these test procedures are covered in this chapter. Configuration items to check include the following:

- Check that the data string being sent to the printer contains the correct information.
- Verify that the correct host interface port is being used and that the communication parameters match those of the host (e.g., baud rate, parity, etc.).
- Verify that the correct interface cable is installed between the host and the printer.

Interfacing

The printer will not function properly with an incorrectly wired cable or the wrong interface cable installed. If the cable is suspect, contact Printronix or your authorized service representative.

When the printer is first powered up, it will reset itself to the communication default parameters. The parameters are listed in the following table:

PARAMETER	DEFAULT VALUE
Baud	9600
Data Bits	8
Parity	NONE
Stop Bits	1

The printer interface configuration settings may be entered from the control panel. See Chapter 3, “Configuring The Printer” for complete instructions.

Controlling Print Quality

Three factors have the greatest effect on print quality:

- The amount of heat applied by the printhead (print intensity)
- The speed at which media is moving under the printhead (print speed)
- The amount of printhead pressure.

For example, low-cost direct thermal media often has very high reaction temperatures, which means that it takes a great deal of heat to make a clear image. Resin ribbons and film media may require higher print intensity for a quality image.

The printer provides two ways to increase the heat:

- Running the printer slower by changing the print speed via the host or the MEDIA CONTROL menu.
- Setting the print intensity to a higher value with the Print Intensity function, accessed via the host or through the MEDIA CONTROL menu. This causes more heat to be transferred into the media, thereby generating a darker image.

Proper printhead pressure adjustment will affect print quality. To adjust pressure, rotate the printhead pressure adjustment dial (see Figure 10). For more information, refer to “Printhead Pressure Adjustment” on page 66.

Also, the printhead should be cleaned frequently to ensure that foreign material does not accumulate on the printhead and interfere with heat transfer. If smears, voids, or white lines appear in the printed form, the printhead should be cleaned with a printhead cleaning pen (see Figure 10).

The cleaning should be done as a matter of routine whenever you install a new ribbon (thermal transfer mode) or when you install new media (direct thermal mode).

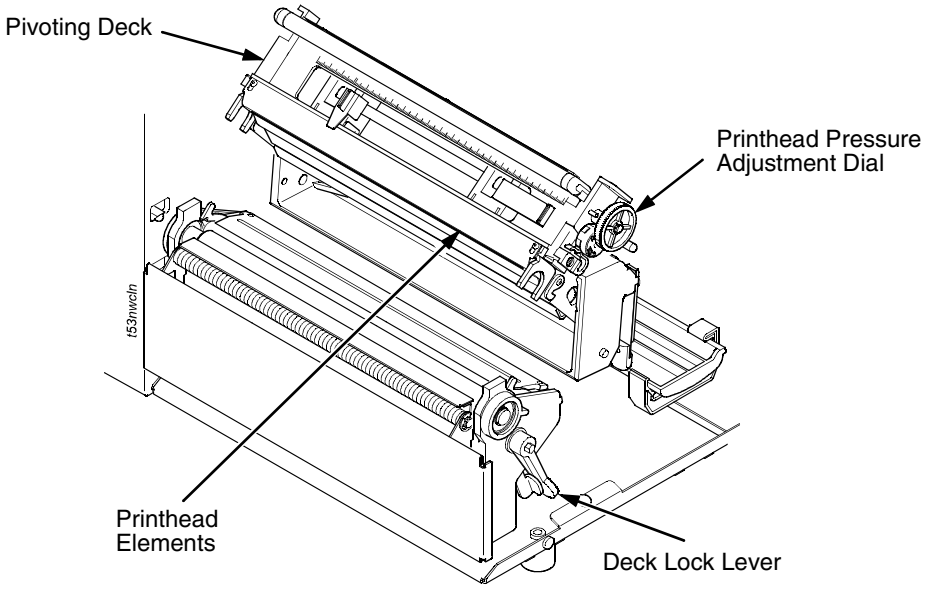


Figure 10. Cleaning the Printhead

Determining Printhead Wear

The most common signs of a worn printhead are fixed vertical streaks that are always the same size and in the same place on the printout. To determine if vertical streaks are caused by a worn printhead, follow these methods:

1. Clean the printhead thoroughly with the printhead cleaning pen. Test again for vertical streaks.
2. Remove the printhead (see page 312) and examine it for contamination or damage such as scratches, dents, or other marks on the light brown area containing the heating elements. Clean and install it, then test again for vertical streaks.
3. Load an alternate roll of media. Test again for vertical streaks.
4. Load an alternate roll of ribbon. Test again for vertical streaks.

If after performing all these tests you still see fixed vertical streaks, you must replace the printhead.

Replacing The Printhead

1. Set the printer power switch to O (Off).

WARNING **Always unplug the printer power cord from the printer or power outlet before doing any installation procedure. Failure to remove power could result in injury to you and damage the equipment. When applicable, you will be instructed to apply power.**

2. Unplug the printer power cord from the printer or the AC power source.
3. Remove the ribbon and media (e.g., paper, label, or tag stock material).

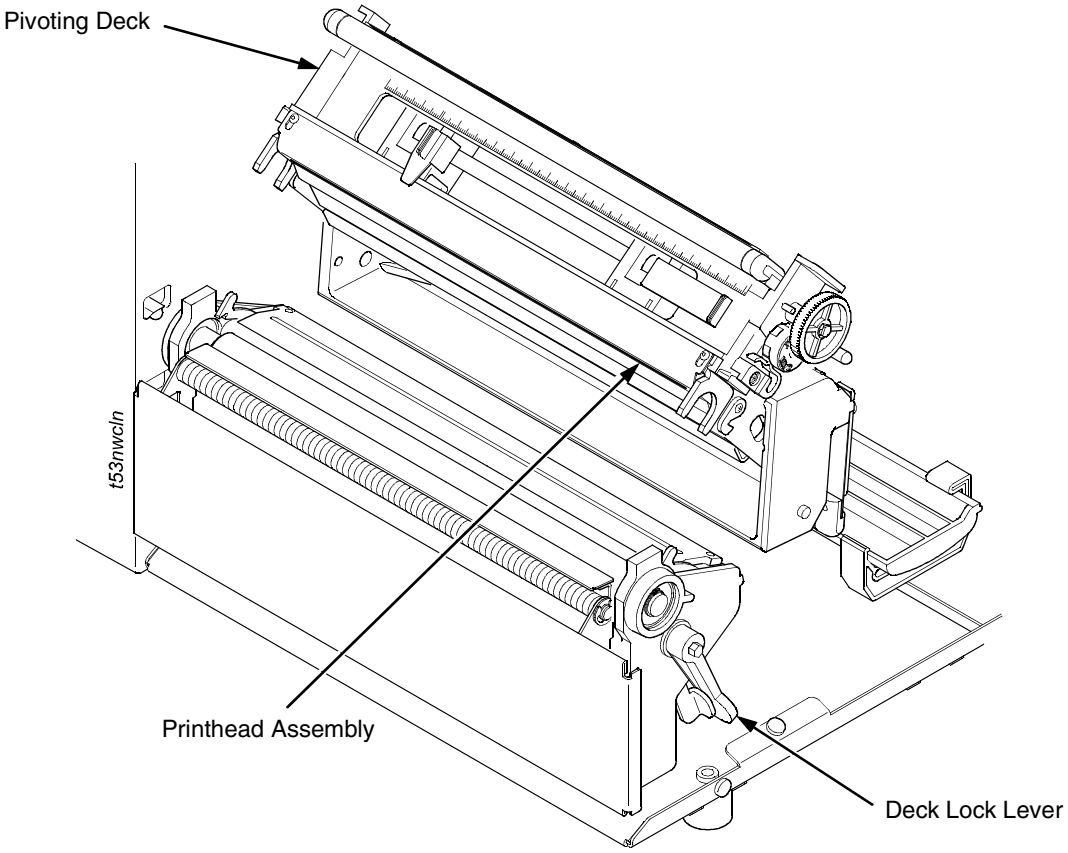


Figure 11. Opening the Pivoting Deck

CAUTION **Oils from your hands can damage the light brown area (heating elements) of the printhead. Do not touch the light brown area when you handle the printhead assembly.**

4. Open the pivoting deck by rotating the deck lock lever fully clockwise. The pivoting deck will swing upward, exposing the bottom of the printhead assembly.

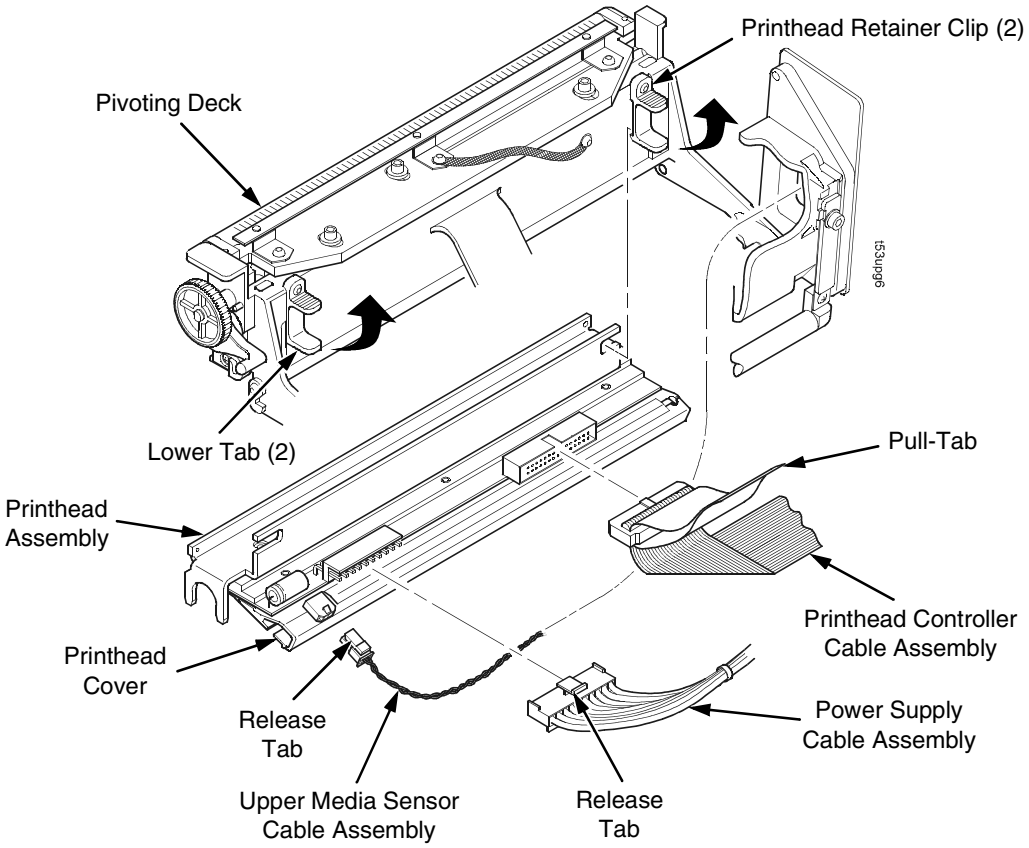


Figure 12. Replacing the Printhead Assembly

CAUTION **To prevent electrostatic damage to electronic components, ground yourself by touching an unpainted part of the printer frame before handling and installing the printhead.**

5. Touch an unpainted part of the printer frame before touching the printhead.
6. Behind the pivoting deck, gently pull the lower tabs of the retainer clips upward to release the printhead assembly. (You only need to pull the tabs a small amount to release the printhead assembly.)
7. Hold the printhead assembly by the printhead cover as it is released.
8. Push the release tab down on the power supply cable assembly and remove the cable from the printhead assembly.
9. Use the pull-tab to remove the printhead controller cable assembly from the printhead assembly.
10. Push the release tab down on the upper media sensor cable assembly and remove the cable from the printhead assembly.

NOTE: The upper media sensor cable assembly connects in the middle for 4 inch models, on the left side for 6 inch models (Figure 12), and on the right side for 8 inch models.

11. Position the new printhead assembly below the pivoting deck and connect the printhead controller, power supply, and upper media sensor cable assemblies.

NOTE: You may need to gently pull the lower tabs of the retainer clips upward to install the printhead assembly.

12. Slide the printhead assembly upward into the pivoting deck until the retainer clips snap it in place. Make sure that the cable assemblies do not extend past the printhead cover and into the media or ribbon path.

Restore The Printer To Operation

1. Inspect the light brown area of the printhead for smudges or fingerprints. If necessary, gently clean the light brown area with a soft, lint-free cloth (or a cotton swab) moistened with isopropyl alcohol, or use a Cleaning Pen (P/N 203502-001).
2. Install the ribbon and media (e.g., paper, label, or tag stock material).
3. Close the pivoting deck and rotate the deck lock lever fully counterclockwise. (Figure 11.)
4. Close the media cover.
5. Plug the AC power cord into the printer and the power source.
6. Set the printer power switch to | (On).
7. Press ⋮☰ to place the printer in Menu mode.
8. Press the ↓ and ↵ keys at the same time until “ENTER SWITCH UNLOCKED” displays.
9. Press ⋮☰ until “DIAGNOSTICS” displays.
10. Press ↓ until “DIAGNOSTICS/Reset Head Data” displays.
11. Press ↵ to select “Reset Head Data.” The message “RESETTING/HEAD DATA” displays. (This sets the Head Print Distance and Head On Time values to zero.)
12. Test printer operation and check print quality by selecting the **Diagnostics** → **Printer Tests** menu and printing one of the test patterns. (Refer to page 250.)

Solving Other Printer Problems

Table 16. Printer Problems and Solutions

Symptom	Solution/Explanation
Communications Failures.	1. Check the interface cable. 2. Check the configuration to ensure the correct interface is enabled. 3. Verify the printer is receiving data by viewing the Job In Process indicator on the control panel.
CONTROL PANEL	
LCD message display is illuminated and the printer appears to be working, but nothing is printing.	1. Verify that the labels are the correct type (direct or thermal transfer). 2. Check that the media is loaded with the direct thermal side facing up. 3. Check that the transfer ribbon is correctly routed. Route transfer ribbon with ink side out. 4. Check that the printhead assembly is properly closed by pressing down on both sides of the pivoting deck. Make sure the latches on each side of the pivoting deck are locked. 5. Verify that the ribbon and media are compatible; incompatibility can cause extremely light printing. Match the ribbon to the type of media being used. 6. Check that the Print Intensity is correct. Set the Print Intensity in the QUICK SETUP menu, MEDIA CONTROL menu, or via the host software. 7. Check that the Label Width parameter value does not exceed the width of the media installed. Set the Label Width in the QUICK SETUP or MEDIA CONTROL menu. 8. Run the TEST PRINT Checkerboard test pattern. 9. Remove the printhead completely and re-install it ensuring the cables are correctly seated.
ONLINE status indicator is flashing.	1. Check the LCD for a specific fault message. Press the PAUSE key, and if a fault message displays, refer to the LCD Message Troubleshooting table on page 323. 2. Check for an Out-of-Media condition or missing labels in the middle of a roll. Load the correct media. 3. Check that the ribbon and label stock are correctly routed. Load ribbon and label stock correctly.

Table 16. Printer Problems and Solutions (continued)

Symptom	Solution/Explanation
Power Failures	
Printer fails to turn on, the display is not backlit, and the fan is not running.	1. Check that the printer AC power cord is correctly attached to the printer and to the AC power outlet. 2. Have a qualified electrician test the AC wall outlet for the correct power range. Locate the printer in an area that has the correct power range. 3. Check the AC power cord. Replace a damaged AC power cord or one that you suspect may be bad. 4. Call your authorized service representative.
PRINT QUALITY	
• Label(s) did not get printed within a multi label print job. • A portion of the printed image was clipped off and the beginning of the next label was printed on the same physical label.	1. If the serial interface is being used, verify that the correct data protocol is selected to match the host interface protocol. 2. If Clip Page = Enable in the MEDIA CONTROL menu, the printer may have falsely detected a gap, hole, or black mark and then clipped (discarded) the remaining printable data for the label. To fix this: a. Perform Auto Calibrate. See “Running Auto Calibrate” on page 74. b. Decrease Gap Threshold value by 2 or 3 increments. See “Gap/Mark Thresh” on page 136. c. Set Clip Page to Disable. Set Label Length to correct physical length value. See “Clip Page” on page 130.
Media moves, but no image prints in ONLINE mode.	1. Make sure the J402 power supply cable has a good connection to the right side of the printhead. 2. Place the printer offline and print the Checkerboard diagnostic test pattern (see page 250). If the pattern prints, there is a communication problem between the host computer and the printer.
Media moves, but no image prints in Direct Thermal mode.	1. Media is not the type for direct thermal printing. Install direct thermal media. 2. Direct thermal media is installed wrong side up. Reinstall the media with the correct side facing the printhead.

Table 16. Printer Problems and Solutions (continued)

Symptom	Solution/Explanation
Media and ribbon move, but no image prints in Thermal Transfer mode.	1. Print the Checkerboard diagnostic test pattern and check that the image appears on the used portion of ribbon. If the image is on the ribbon, the ribbon may be installed with the transfer side against the printhead, instead of against the media. 2. The ribbon may be designed for another model printer. 3. The ribbon may not be compatible with the media.
When narrow media is installed, the media moves but no image prints.	Verify the Label Width value in the QUICK SETUP or MEDIA CONTROL menu agrees with the width of the installed media. Too large a value will start the image too far to the right and off the media.
Printing is faded or of poor quality.	1. Clean the printhead. 2. Check that both latches on the pivoting deck are closed and latched. Close the printhead by pressing down on both sides of the pivoting deck and rotating the deck lock lever fully counterclockwise. 3. Verify that the head pressure adjustment dial is properly set. Try increasing the pressure. 4. Verify that the Print Speed and Print Intensity values are correct. Adjust Print Speed and Print Intensity in the QUICK SETUP menu, MEDIA CONTROL menu, or via host software.
Print is light on the left or right side of the label.	Check if the pressure blocks are set for the width of the media being used. Set each block near the edge of the media.
Prints strange characters instead of the correct label format.	1. If the printer serial interface is being used, check that the printer serial baud rate setting matches the baud rate of the host computer. Reset the printer via software, or turn the printer off and then on. 2. Check if the printer serial host interface is set for 8 data bits but the transmitting device is set for 7 data bits (or vice-versa). Check the current setting by viewing it on the LCD, and use the SERIAL PORT menu to adjust the settings, if necessary. 3. If the printer parallel interface is being used, make sure the parallel interface terminating resistors are correct for the host computer drivers.

Table 16. Printer Problems and Solutions (continued)

Symptom	Solution/Explanation
• Start of image is printed an erroneous distance from the top-of-form. • The printer starts to print one label and then another, all within the same physical label.	1. In the MEDIA CONTROL menu, set Clip Page to Disable. 2. Make sure the Label Length value matches the actual physical length of the label installed. These symptoms could be caused by: • severely curled labels near the end of a media roll • the media sensor triggering off of a dark, preprinted image on the label • multiple gaps within the physical label.
• Loss of one or more serialized labels within a print job. • Start of image is printed in the middle of the gap. • The top part of the image is lost when printing with Head First orientation selected.	1. In the CALIBRATE CTRL menu, set Gap Windowing to Enable. 2. Set Gap Length to equal the physical gap length of the media installed. The range is 0.05 to 1.00 inches. The likely cause of these symptoms is that Clip Page = Enable and a cross-perforation, radical fold or flaw in the liner has caused the media sensor to detect this as the leading edge (TOF) of the new label or end of label (EOF), or both.

Table 16. Printer Problems and Solutions (continued)

Symptom	Solution/Explanation
Smears or voids in printed image.	1. Clean the printhead. 2. Make sure the printhead temperature (Print Intensity) is not too high. Change the Print Intensity value in the QUICK SETUP or MEDIA CONTROL menu. (See “Print Intensity” on page 120.) 3. Verify that the printhead pressure blocks are positioned correctly to match the media width installed. (See “Printhead Pressure Block Adjustments” on page 67.) 4. Make sure the printhead pressure dial is set properly for the media thickness installed. 5. Skin oils can adhere to the surface of label stock, causing fingerprints which inhibit thermal transfer. Wipe label stock with a cloth, or remove a few feet of labels to expose a clean area. Handle labels by the edges. 6. Check that the media has not been mishandled before or during installation in the printer. Soiled media or media with fingerprints will prevent proper ribbon transfer. 7. Check that media has not been installed inside out. Surfaces on both sides may look identical but can produce big differences in print quality. 8. Make sure the correct ribbon and media combination are being used. Use the correct ribbon type. 9. Check the ribbon for creases or folds across its surface. Smooth out the ribbon to remove any creases. 10. Reduce the Print Speed value through the QUICK SETUP menu, MEDIA CONTROL menu, or via host software. 11. If using ribbon (Transfer Print mode), do not use direct thermal media.

Table 16. Printer Problems and Solutions (continued)

Symptom	Solution/Explanation
PRINTER OPERATION	
Advances several labels when FEED key is pressed.	1. Check that labels are loaded correctly. (See “Loading Media And Ribbon” on page 40.) 2. Check that the Label Length (in the QUICK SETUP menu, MEDIA CONTROL menu, or sent by the host computer) agrees with the length of the media installed. Although gaps, holes, notches, or black marks are used to establish the Top-of-Form position, a larger page length will override the gap and skip a page or more if Clip Page (in the MEDIA CONTROL menu) is set to Disable. Set Page Length to match the media being used. 3. Check that the printer is optimized to detect the type of media installed. Perform Auto Calibrate for gapped and black mark media. (See “Running Auto Calibrate” on page 74.) 4. Adjust the media sensor horizontally to detect gaps, holes, notches, or narrow width black marks. (See “Positioning The Media Sensors” on page 68.) 5. If the problem persists, run the Media Profile printout to see if the label length indicators are being sensed. 6. Run Manual Calibrate. (See “Running Manual Calibrate” on page 77.)
Pivoting deck is difficult to close and lock when heavy tag stock media is installed.	1. Set the printhead pressure adjustment dial to the MIN position. 2. Close the pivoting deck and lock the deck lock lever. 3. Position the printhead pressure adjustment dial to the desired head pressure setting.
Print is too small or too large.	Ensure the proper printhead is installed (203 or 300 dpi).
• Print quality is good, but the printer skips every other label. • An occasional blank label occurs within a print job, but no labels are lost.	1. Make sure that the label is not formatted too close to the top edge of the form. Leave white space equal to eight dot rows at the top of the label. 300 dpi = .0264 inches. 203 dpi = .04 inches. 2. Check that Clip Page = Enable in the MEDIA CONTROL menu. Clip Page = Enable causes any printable data to be clipped off and lost once the next TOF position (transmissive gap, notch, hole, or reflective mark) is detected. Clip Page = Disable allows the printer to ignore a gap or mark. The printer looks for the gap or mark after the specified Label Length is first reached.

Table 16. Printer Problems and Solutions (continued)

Symptom	Solution/Explanation
RIBBON	
Printer advances media, but the ribbon does not advance.	1. Make sure the ribbon is installed correctly. 2. A poor ribbon/media combination can cause insufficient friction between the media and ribbon. Verify that the correct ribbon and media are being used. 3. The printhead pressure may not be set high enough. Set the pressure higher. 4. There may be adhesive on the printhead. Clean the printhead. 5. Verify that Print Mode in the QUICK SETUP or MEDIA CONTROL menu is set for Transfer and not Direct Thermal.
Printer cuts (melts) through the transfer ribbon.	1. Verify that Print Intensity is set to the proper level in the QUICK SETUP or MEDIA CONTROL menu. 2. Verify that Print Mode in the QUICK SETUP or MEDIA CONTROL menu is set for Transfer and not Direct Thermal.
Printing stops and the ONLINE status indicator flashes.	1. Check that the media sensor is clean and undamaged. 2. Check that the gap between the bottom of a label and the top of the next label is at least 0.100 inch. Use only labels and tag stock approved for this printer. 3. Inspect for a jammed label. Remove the jammed label. 4. Check that the transfer ribbon and label stock are routed correctly.
Narrow width ribbon breaks frequently.	The Ribbon Width value in the MEDIA CONTROL menu is set too large, which causes too great a ribbon take-up and ribbon supply spindle torque. Reduce the Ribbon Width value to decrease the torque on the ribbon spindles. The Ribbon Width value should be very close to the Label Width value. To reduce the torque further, set Ribbon Length (in the MEDIA CONTROL menu) from Save As Paper to Set In Menu. Then set a value less than the installed ribbon width.
Wide width ribbon does not take up properly. The ribbon moves past the platen assembly.	The Ribbon Width value in the MEDIA CONTROL menu is set too narrow for the ribbon installed. Set the Ribbon Width value to match the width of the ribbon installed. This will increase the torque on the ribbon take-up spindle.

Printer Alarms

The printer has built-in alarms that monitor printer status and media stock conditions. Alarm messages display indicating the present status of the printer and media stock levels. The alarms also indicate if the printer electronics detect an error condition.

Fault Messages

If a fault condition occurs in the printer, the status indicator on the control panel flashes on and off and the message display indicates the specific fault. Fault messages are summarized in Table 17.

Displayed faults fall into one of two categories:

- Operator correctable
- Field service required

Operator-Correctable Fault Messages

For the operator-correctable faults, follow the suggested corrective action under the solution section of the table. After correcting the displayed fault, press the PAUSE key to clear the error message and status indicator and resume printing. If the fault message reappears, power off the printer and wait 15 seconds before powering on the printer again. If the error condition persists, contact your authorized service representative.

Fault Messages Requiring Field Service Attention

If a fault is not correctable by the operator, the fault message is followed by an asterisk (*). This usually indicates that an authorized service representative is needed. You should try two steps to clear the fault before calling your authorized service representative:

1. Set the printer power switch to O (off), wait 15 seconds, then turn the printer on again. Run your print job again. If the message does not appear, it was a false indication and no further attention is required.
2. If the message reappears, press the PAUSE key. If the message goes away, it was a false indication and no further attention is required. If the message reappears, call your authorized service representative.

Table 17. LCD Message Troubleshooting

Displayed Message	Can User Correct?	Explanation	Solution
06 HOST REQUEST	Yes	Status message: in CT emulation, the host computer or printer controller requires attention.	Not a printer problem.
08 HOLD PRINT TIMEOUT	Yes	Status message: in CT emulation, the printer was offline more than 10 minutes and the “Intervention Required” parameter is set to “Send to Host.”	Press PAUSE to put the printer online.
15 COMM CHECK	Yes/No	Communication Check: a message that appears in the CT emulation meaning the line is not active on a twinax interface.	1. Check your network for proper operation. 2. Try a different cable from a known good device. 3. If the problem persists, contact your authorized customer service representative.
22 INVALID ADDR	Yes	Invalid Address: poll time-out on the twinax interface indicating the unit address is not recognized by printer.	Have the system administrator make sure the printer address is correct.
27 CU TIMED OUT	Yes	Controller Unit Timed Out: the printer was not enabled for one minute or more on a coax interface.	Check the cable connection and host system. (Refer to the line problem determination procedures, as recommended by the host system.)
28 CU NOT ENAB	Yes	Controller Unit Not Enabled. Poll time-out-error. The printer was not polled for one minute across a coax interface.	Check the cable connection and host system. (Refer to the line problem determination procedures, as recommended by the host system.)
33 HEAD OPEN TIMEOUT	Yes	Status message in the CT emulation: The printer was offline more than 10 minutes, and the "Intervention Required" parameter is set to "Send to Host."	Close and latch the printhead. Press PAUSE to put the printer online.
40V POWER FAIL	Yes	+40 VDC: an internal power failure.	Power off the printer for 15 seconds, then power back on. If the problem persists, contact your authorized customer service representative.
203 DPI Head Installed	Yes	Normal power-up message. The printer is running its initialization routine and indicating DPI resolution of the installed printhead.	No action required.

Table 17. LCD Message Troubleshooting (continued)

Displayed Message	Can User Correct?	Explanation	Solution
300 DPI Head Installed	Yes	Normal power-up message. The printer is running its initialization routine and indicating DPI resolution of the installed printhead.	No action required.
Ambient light Validator failure	Yes	Ambient light is compromising proper scanning. **NOTE:** The Validator scanning laser cannot work properly in a room with excessive ambient light, including direct sunlight.	1. Minimize the ambient light around the validator. This may require moving the printer to a darker area of the room. 2. Press the PAUSE key to clear the fault message.
BAD VFU CHANNEL	Yes	The user tried to use an undefined VFU channel.	Use defined channels.
BAR CODE IMPROPER Data Format	Yes	Data validation error: improper data format.	Fix application so it sends data in the correct bar code format.
BAR CODE QUIET Zone too small	Yes	Data validation error: Quiet Zone error.	1. Fix application. 2. Disable Quiet Zone Error reports.
BATT HIGH VOLT	Yes	This is the High Volt Alert that can be set by the user (factory default = 16.0 Volts). This fault detection is only supported when the ICP (Intelligent Control Panel) option is connected to the printer serial port and Battery Monitor = Enable in the BATTERY CONTROL menu.	1. Raise the value in the High Volt Alert option in the BATTERY CONTROL menu. 2. If High Volt Alert = 16.0 Volts and the fault message remains, call your authorized service center.
BATT LOW VOLT	Yes	This is the Low Volt Alert that can be set by the user (factory default = 8.5 Volts). This fault detection is only supported when the ICP (Intelligent Control Panel) option is connected to the printer serial port and Battery Monitor = Enable in the BATTERY CONTROL menu.	1. Plug the power cart cable into an AC receptacle to recharge the battery. 2. If recharging the battery fails to clear the fault, replace the battery or batteries.
BUFFER OVERFLOW	Yes	Host sent data after the printer buffer was full (serial interface).	1. Make a configuration printout. 2. Verify that the printer matches the host serial interface configuration settings for Data Protocol, Baud Rate, Data Bits, Stop Bits, Parity, Data Terminal Ready, and Request to Send. 3. Set printer serial interface parameters to match those of the host.

Table 17. LCD Message Troubleshooting (continued)

Displayed Message	Can User Correct?	Explanation	Solution
BUFFER OVERRUN	Yes	Receive overrun (serial interface).	1. Make a configuration printout. 2. Verify that the printer matches the host serial interface configuration settings for Data Protocol, Baud Rate, Data Bits, Stop Bits, Parity, Data Terminal Ready, and Request to Send. 3. Set the printer serial interface parameter to match those of the host.
Calibration warning	Yes	The validator has detected that it needs calibration. This is a reminder message and does not halt printing.	Press the PAUSE key to clear the message. Perform the calibration procedure described in the *Validator User's Manual*.
CALIBRATION FAIL See Manual	Yes	Calibration values derived from Manual Calibrate were not acceptable.	Run Manual Calibrate again.
CANNOT CALIBRATE Disable Peel-Off	Yes	Run Calibrate was attempted with Peel-Off Media Handling selected. **NOTE:** You can perform Auto Calibrate in Peel-Off mode if Cal in Peel Mode = Enable. Be prepared to catch labels during Auto Calibrate.	1. Select another Media Handling option in the QUICK SETUP or MEDIA CONTROL menu. 2. Enable Cal in Peel Mode in the CALIBRATE CTRL menu. **NOTE:** Admin User must = Enable.
Checksum Failure	Yes	The validator detected that the barcode fails checksum or is missing the checksum digit.	Verify that the checksum digit exists in the barcode and that it is the correct value.
CLEARING PROGRAM FROM FLASH	Yes	Emulation software successfully loaded into printer RAM and the checksum matched. The old program is now being deleted from flash memory.	No action required.
CONTRAST TOO LOW Check media	Yes	Data validation error: symbol contrast.	1. Adjust heat or change media. 2. Disable symbol contrast error reports.
CUTTER FAULT Jam or Cut Fail	Yes	1. Cutter assembly is not in the closed position. 2. Cutter option was not able to complete a full cut cycle due to a jam. 3. Cutter PCBA detected current overload and opened circuit breaker on cutter PCBA.	1. Place the cutter assembly in the closed (up) position. 2. Clear obstruction from the cutter assembly. 3. Insure media thickness is within specification. Wait a few minutes for the cutter circuit breaker to automatically reset. Press PAUSE to clear the fault message and resume printing.

Table 17. LCD Message Troubleshooting (continued)

Displayed Message	Can User Correct?	Explanation	Solution
DEACTIVATING HOST SERIAL	Yes	Normal message that displays when you set Validator Funct. = Enable in the VALIDATOR menu or Battery Monitor = Enable in the BATTERY CONTROL menu.	No action required.
DIAGNOSTICS PASSED	Yes	The printer passed its memory and hardware initialization tests.	No action required.
DIRECT THERMAL Remove Ribbon	Yes	This is the normal reminder message when you change the Print Mode setting from Transfer to Direct in the QUICK SETUP or MEDIA CONTROL menu.	1. Remove ribbon from the ribbon supply and ribbon take-up spindles in the printer. 2. If ribbon is required for printing, change the Print Mode back to Transfer.
DO NOT POWER OFF	No	This is a standard warning message that displays while the printer is downloading software.	Do not power off the printer until downloading is complete.
DOWNLOADING TO VALIDATOR	Yes	Normal message when the printer is downloading emulation software with a validator option installed. **NOTE:** Many software builds contain updates to the Validator option.	No action required. **NOTE:** The validator software update can be verified in the F/W Revision menu option of the VALIDATOR menu. Shown as: Example X326
E-NET INIT	Yes	Ethernet is initializing.	No action required.
E-NET READY	Yes	Ethernet has finished initializing.	No action required.
E-NET RESET	Yes	Ethernet interface is being reset.	No action required.
EC SOFTWARE FAIL See Manual	Yes/No	Engine control software failure.	Power off the printer for 15 seconds, then power back on. If the problem persists, contact your authorized customer service representative.
ENTER to Stop	Yes	Normal message when a test print pattern that will run continuously has been enabled.	Press the ENTER key to stop printing the test pattern.
ERROR: DC PROGRAM NOT VALID	Yes/No	The printer cannot find the data controller program or the validation checksum is corrupt.	Power off the printer for 15 seconds, then power back on. If the problem persists, contact your authorized customer service representative.

Table 17. LCD Message Troubleshooting (continued)

Displayed Message	Can User Correct?	Explanation	Solution
ERROR: DRAM AT ADDRESS XXXXXXXX	Yes/No	The printer found a defective memory location.	Power off the printer for 15 seconds, then power back on. If the problem persists, contact your authorized customer service representative.
ERROR: FLASH DID NOT PROGRAM	Yes/No	The printer encountered an error trying to program flash memory.	Power off the printer for 15 seconds, then power back on. If the problem persists, contact your authorized customer service representative.
ERROR: IPDS needs 300 DPI Head	Yes	The printer has detected a 203 DPI printhead installed with IPDS software downloaded. IPDS software only supports the 300 DPI printhead.	Power off the printer and replace the 203 DPI printhead with a 300 DPI printhead.
ERROR: NO DRAM DETECTED	Yes/No	The printer could not find any DRAM.	Power off the printer for 15 seconds, then power back on. If the problem persists, contact your authorized customer service representative.
ERROR: PROGRAM NEEDS MORE DRAM	Yes/No	The printer requires more DRAM memory in order to run the downloaded program.	Power off the printer for 15 seconds, then power back on. If the problem persists, contact your authorized customer service representative.
ERROR: PROGRAM NEEDS MORE FLASH	Yes/No	The printer requires more flash memory in order to run the downloaded program.	Power off the printer for 15 seconds, then power back on. If the problem persists, contact your authorized customer service representative.
ERROR: PROGRAM NOT COMPATIBLE	Yes	The printer is not compatible with the downloaded program.	Power off the printer for 15 seconds, then power back on. If the problem persists, contact your authorized customer service representative.
ERROR: PROGRAM NOT VALID	Yes	The printer does not see a program in flash memory.	Power off the printer for 15 seconds, then power back on. If the problem persists, contact your authorized customer service representative.
ERROR: SECURITY PAL NOT DETECTED	Yes/No	The security PAL is not present or has failed.	Power off the printer for 15 seconds, then power back on. If the problem persists, contact your authorized customer service representative.
ERROR: SHORT AT ADDRESS XXXX	Yes/No	Hardware failure in DRAM or Main PCBA controller circuitry.	Power off the printer for 15 seconds, then power back on. If the problem persists, contact your authorized customer service representative.
ERROR: WRITING TO FLASH	Yes/No	Hardware or software fault in flash memory.	Power off the printer for 15 seconds, then power back on. If the problem persists, contact your authorized customer service representative.

Table 17. LCD Message Troubleshooting (continued)

Displayed Message	Can User Correct?	Explanation	Solution
ERROR: WRONG CHECKSUM	Yes/No	The printer received the complete program but the checksum did not match. The data may have been corrupted during download.	Power off the printer for 15 seconds, then power back on. If the problem persists, contact your authorized customer service representative.
ERROR OCCURRED FLUSHING QUEUES	Yes	An interim message displays while the printer discards host data it cannot use because a fault condition exists. While this message displays, the asterisk (*) rotates.	Wait. When the asterisk (*) stops rotating, a different fault message will appear; troubleshoot the final message.
FAN WARNING	Yes	The printer detected that the power supply fan did not rotate for at least 45 seconds when it is was supposed to. **NOTE:** This is a warning message and will not halt printing. When too high of internal temperature is detected, based on its source, the printer will stop printing and display a PWR SUPPLY HOT, PRINTER HOT or PRINT HEAD HOT message.	1. Verify that the fan rotates when the printer is first powered up and when the printer moves media or prints. 2. Call your authorized service representative.
FILE EXISTS Enable Overwrite	Yes	The printer operator tried to save a file using the name of an existing stored file.	Enter the PRINTER CONTROL menu and enable the Overwrite Files feature to overwrite the existing file.
FILE SYS FULL Add Flash	Yes/No	Insufficient flash memory available to store file.	Install a larger flash memory SIMM. For additional flash, contact your authorized service representative.
FILE SYS FULL Delete Files	Yes	Insufficient flash memory available to store file.	Enter the PRINTER CONTROL menu. Use Delete Files to delete unwanted files.
FILE SYS FULL Optimize & Reboot	Yes	Insufficient flash memory available to store file.	Enter the PRINTER CONTROL menu and use the Optimize & Reboot feature.
FILE SYS INVALID Optimize&Reboot	Yes/No	File system not detected or flash was corrupted.	Enter the PRINTER CONTROL menu and use the Optimize & Reboot feature.
FILE SYS WRITE Check Flash	Yes/No	Problem writing to flash memory.	Power off the printer for 15 seconds, then power back on. If the problem persists, contact your authorized customer service representative.
FPGA FILE NOT FOUND	Yes/No	The program file was not downloaded successfully.	1. Download the program file again. 2. If the message reappears, contact your authorized customer service representative.

Table 17. LCD Message Troubleshooting (continued)

Displayed Message	Can User Correct?	Explanation	Solution
FRAMING ERROR	Yes	Serial framing error over a serial interface.	Match the serial interface settings of the printer to those of the host computer.
GAP NOT DETECTED See Manual	Yes	The printer is set for Gap or Mark sensing, but a gap, notch, or black mark is not being detected. The lower media sensor is not positioned correctly. When Advanced Gap or Advanced Notch is selected, the upper media sensor is not positioned above the lower media sensor. Gap/Mark Threshold is set too high or Paper Out Threshold is set too low.	1. Check that the setting of the Gap/Mark Sensor in the CALIBRATE CTRL menu matches the installed media. 2. Check the position of the lower and upper media sensors. (See “Positioning The Media Sensors” on page 68.) 3. Clean the sensor assembly and paper path. 4. Run Auto Calibrate to improve the sensor’s ability to detect the media in use. 5. Run the Media Profile printout in the CALIBRATE CTRL menu. 6. Run Manual Calibrate. (See “Running Manual Calibrate” on page 77.) 7. Manually change the Gap/Mark Threshold and/or Paper Out Threshold values.
GRF CHK ERROR PRESS PAUSE	Yes	In the CT emulation over a twinax interface, the printer received a non-printable character.	Press the PAUSE key twice.
Half Speed Mode	Yes	The printhead or power supply is approaching a hot state. Half Speed Mode helps the cooling process and should permit completion of print jobs. Half Speed Mode helps prevent a PRINT HEAD HOT or PWR SUPPLY HOT fault, which will stop the printer.	1. Allow printer to continue printing. Full speed will resume automatically when a lower printhead or power supply temperature is achieved. 2. Let the printer cool down. Full speed will be restored when printing is resumed. 3. Lower Print Intensity and Print Speed to reduce frequency of Half Speed Mode.
HEAD POWER FAIL	Yes/No	Printhead lost power.	1. Replace the printhead. 2. Power off the printer for 15 seconds, then power back on again. If the problem persists, contact your authorized customer service representative.
IGP/PGL ERROR	Yes	Appears when the "Fault" option is selected from Error Report in the front panel.	Deselect "Fault" from Error Report on the front control panel.

Table 17. LCD Message Troubleshooting (continued)

Displayed Message	Can User Correct?	Explanation	Solution
INSUFFICIENT RAM Reboot/Add RAM	Yes/No	Not enough RAM memory available for a printer function.	1. Power off the printer for 15 seconds, then power back on again. 2. To add more RAM memory to your printer, contact your authorized customer service representative.
LABEL MISSING Check Paper Path	Yes	The Label Taken Sensor did not detect the label present over the tear bar with Tear-Off or Peel-Off Media Handling mode enabled. • The label was removed before the printer stopped printing or before the LCD “Remove Label” message displayed. • The label slipped behind the platen roller. • The label wrapped around the platen roller. • Tear-Off or Peel-Off Media Handling mode was mistakenly selected.	1. Press the PAUSE key to continue printing and then wait for the LCD “Remove Label” message before removing the label. 2. Open the pivoting deck, reinstall the label, close the deck, press the PAUSE key, and continue printing. 3. Open the pivoting deck and remove wrapped labels from the platen. Clean all adhesive from the platen. Reinstall labels, close the deck, press the PAUSE key, and continue printing. 4. Select the correct Media Handling mode in the QUICK SETUP menu.
LOADING PROGRAM FROM PORT XX%	Yes	The new emulation program is loading into printer RAM. XX% indicates how much of the program has loaded.	No action required.
LOADING PROGRAM INTO FLASH	Yes	A program is getting loaded into flash.	No action required.
MENU MODE QUICK SETUP	Yes	Normal message that displays when you first press the MENU key to place tje printer in Menu mode when no validator option is installed.	No action required.

Table 17. LCD Message Troubleshooting (continued)

Displayed Message	Can User Correct?	Explanation	Solution
NON VOLATILE MEMORY FAILED	Yes/No	The printer assigns a certain amount of simulated NVRAM for storage of saved configurations. Large emulations reduce the amount of space available for saving configurations, which means that sometimes fewer than eight configurations can be saved. If this message appears when saving a configuration, it means the printer is out of memory. Previously saved configurations will still be available, but the one that was “saved” when the message appeared is not in memory. If this message appears at power-up, it means the flash memory is defective.	1. If the message appears at power-up, call your authorized customer service representative. 2. If the message appears while saving a configuration, the printer is out of memory and will not save that or subsequent configurations. (Previously saved configurations are still okay.) 3. Limit the number of saved configurations to seven.
OPTION NOT INSTALLED	Yes	If the printer is powered on with the cutter enabled in the Media Handling menu, but the cutter itself is open (in the down position), the printer cannot detect the cutter. When using the cutter, the printer must be powered on with the cutter in the up position.	1. Check that the cutter option is installed, connected, and in the up position before powering on the printer. 2. Install the cutter option or change to the correct Media Handling option in the QUICK SETUP menu. 3. If the error persists, contact your authorized customer service representative.

Table 17. LCD Message Troubleshooting (continued)

Displayed Message	Can User Correct?	Explanation	Solution
PAPER OUT Load Paper	Yes	The printer does not sense media: • Media was not installed or has run out. • A break in media has occurred. • Media was not routed or installed correctly. • The media sensor is not positioned correctly. • Media is installed correctly, but the sensor is not detecting it. • Gap/Mark Threshold value may be set too high and/or Paper Out Threshold may be set too low. • The printer detected a false PAPER OUT when changing from Advanced Gap or Advanced Notch to Gap or Mark sensing or vice-versa.	1. Install media. If a break occurred, reinstall the media. Press the PAUSE key to clear the fault message. Check the media installation procedures on page 40. 2. Verify the lower media sensor is properly positioned under the media. If Advanced Gap or Advanced Notch is selected, verify the upper media sensor is positioned above the lower media sensor. Run Auto Calibrate to improve the ability of the sensor to detect the installed media. 3. Check if the Gap/Mark Threshold is too high or the Paper Out Threshold is too low. Lower the Gap/Mark Threshold or raise the Paper Out Threshold value. 4. If using media with no gaps or black marks, perform Auto Calibrate to establish a valid Paper Out Threshold. 5. If the printer detected a false PAPER OUT when changing from Advanced Gap or Advanced Notch to Gap or Mark sensing or vice-versa, press the PAUSE key and run Auto Calibrate.
PAPER OUT TIMEOUT	Yes	In the CT emulation with a coax interface, a time-out message is sent to the host if paper is not loaded within 10 minutes after PAUSE was pressed to clear a paper out fault.	Load media and run a print test. If the message persists, contact your authorized service representative.
PARITY ERROR	Yes	Parity error (serial interface).	Check your serial host interface parameter settings. If necessary, change them so they match the settings of the attached host.
POOR SCANNING Check Head&Heat	Yes	Data validation failure: The ratio between bar code elements is too small.	Adjust heat/speed/pressure.
POOR SCANNING Check media	Yes	Data validation failure: The bar code is only good in small bands that are difficult to scan.	Check for ribbon wrinkle. Roll wrinkled area onto take-up spindle.

Table 17. LCD Message Troubleshooting (continued)

Displayed Message	Can User Correct?	Explanation	Solution
POOR SCANNING Inspect head	Yes/No	Data validation failure: Defects failure; blemishes with the bar code are detected.	1. Check paper and ribbon to make sure they are clean, unwrinkled, and installed properly. 2. Clean printhead. 3. If message persists, replace the printhead.
POWER SAVER MODE	Yes	This is a status message. The printer is in low-energy idle state, the fan and higher voltages are off, and only +5Vdc logic circuits are active.	No action required.
PRINT HEAD COLD See Manual	Yes	Printer is in a cold environment or connector P401 has become dislodged from the back of the printhead.	1. Reseat P401 on printhead. 2. Change the printhead. 3. Place printer in a warmer location. 4. If problem persists, contact your authorized service representative.
PRINT HEAD HOT See Manual	Yes/No	The printhead has become overheated.	1. Allow the printhead to cool down for 5 minutes, then press PAUSE. Resume printing. 2. If possible, reduce print intensity. 3. If problem persists, contact your authorized service representative.
PRINT HEAD UP Close Print Head	Yes	Printhead is not closed and completely latched.	Close and latch the printhead pivoting deck.
PRINTER HOT See Manual	Yes/No	The printer has detected higher than usual temperatures on the controller PCBA.	1. Determine that the fan is operating and that all air vents are unobstructed. 2. Power off the printer for 15 seconds, then power the printer back on. 3. Move the printer to a cooler location. 4. If the problem persists after moving the printer to a cooler location, contact your authorized customer service representative.
PRINTER UNDER REMOTE CONTROL	Yes	Indicates that remote management software has control of the printer.	Press any key on the printer.
PWR SUPPLY HOT See Manual	Yes	Power supply is hot.	1. Determine that the fan is operating and that all air vents are unobstructed. 2. Move the printer to a cooler area. 3. If the problem persists, contact your authorized customer service representative.

Table 17. LCD Message Troubleshooting (continued)

Displayed Message	Can User Correct?	Explanation	Solution
RBN TAKEUP FULL Remove Used Rbn	Yes	The ribbon takeup spool is full.	1. Empty the takeup spool. 2. If the takeup spool is not full, try re-threading the ribbon. 3. Disable Rbn Takeup Full in the MEDIA CONTROL menu.
REACTIVATING HOST SERIAL	Yes	Normal message that displays when you set Validator Funct. = Disable in the VALIDATOR menu or Battery Monitor = Disable in the BATTERY CONTROL menu.	No action required.
RECHARGE BATTERY	Yes	This is the Time To Go Alert you can set (factory default = 1.0 Hour). This fault detection is only supported when the ICP (Intelligent Control Panel) option is connected to the printer serial port and Battery Monitor = Enable in the BATTERY CONTROL menu.	1. Plug the power cart cable into an AC receptacle to recharge the battery. 2. If recharging the battery fails to clear the fault, replace the battery or batteries.
Remove Label	Yes	• A label was detected at the front of the printer by the Label Taken Sensor. This is the normal reminder message when Peel-Off or Tear-Off Media Handling has been selected. • A label was removed, but the “Remove Label” message remained. • The incorrect Media Handling mode was selected.	1. Remove the label from the front of the printer to allow the next label to print. 2. Verify that a front door assembly is installed on the printer and that it is properly closed. Ensure that no debris is obstructing the door mirror or the Label Taken Sensor. 3. In the QUICK SETUP or MEDIA CONTROL menu, change Media Handling to the correct selection.
RESETTING PLEASE WAIT	Yes	Printer finished loading the program into flash memory and is automatically resetting itself.	No action required.
RESTORING BOOT CODE	Yes	Normal download initialization message.	No action required.
RFID TAG FAILED:Check Media	Yes	Failed tag. Error displays in STOP mode, causing printer to halt.	Initiate reprint of the label from the host. When the error is cleared, the label with the failed tag moves forward to the next TOF position.

Table 17. LCD Message Troubleshooting (continued)

Displayed Message	Can User Correct?	Explanation	Solution
RFID MAX RETRY:Check System	Yes	Failed tag. Error displays in OVERSTRIKE mode. Each failed label prints with the OVERSTRIKE pattern; the form retries until the label retry count is exhausted.	Clear the error. When the error is cleared, the label with the failed tag moves forward such that the next label is in position.
RIBBON BROKEN Reload Ribbon	Yes	Ribbon is broken between the ribbon take up spindle and the printhead.	Reattach ribbon.
RIBBON FAULT Timeout	Yes	In the CT emulation with a coax interface, the ribbon has not moved for 10 minutes after PAUSE was pressed to clear a ribbon fault.	1. Clean the printer. 2. Power off, wait 15 seconds, then power back on again. If the message persists, contact your authorized customer service representative.
RIBBON LOAD BAD Reload Ribbon	Yes	Ribbon was incorrectly loaded on the take-up or supply spindle.	1. Reload the ribbon correctly. For ribbon loading instructions, see page 53.
Ribbon Low	Yes	1. The supply spool is getting low. 2. If there is a large amount of ribbon still on the supply spool, then the Ribbon Low message is being displayed falsely.	1. Replace ribbon, and if further adjustments are necessary, change the Ribbon Low value (in the MEDIA CONTROL menu) to a lower value. 2. Disable Ribbon Low in the MEDIA CONTROL menu.
RIBBON OUT Load Ribbon	Yes	1. The ribbon supply spool is empty. 2. The ribbon has broken.	1. Replace ribbon. 2. Reinstall ribbon.
SECURITY CODE VIOLATION	Yes	The software being used is not correct for the printer.	1. Load the correct software. 2. Power off the printer for 15 seconds, then power back on again. If the problem persists, contact your authorized customer service representative.
SELECT DOWNLOAD PORT=XXXXXXXXXX	Yes	Normal message when the printer is being setup for downloading software to the serial or parallel port. “PORT=” displays selected serial port and parameters or Centronics port.	1. Complete the downloading software procedure. See “Downloading Software Through The Serial Or Parallel Port” on page 290. 2. Exit this procedure by cycling printer power.
SIGNAL Clipping	Yes/No	Data validation error: The validator cannot read clearly because either the ambient light is too bright or there is a hardware failure inside the validator itself.	1. Dim ambient lighting. 2. Replace the validator.

Table 17. LCD Message Troubleshooting (continued)

Displayed Message	Can User Correct?	Explanation	Solution
SOFTWARE ERROR* Recycle Power	Yes/No	1. Application software tried to perform an illegal printer function. 2. There are damaged logic circuits on the controller PCBA.	1. Recycle the printer power. If possible, print a job that has previously worked. 2. If the problem persists, contact your authorized service representative.
Speed Exceeds Validator Limit	Yes	The Print Speed or Slew Speed value is above 6 IPS as the power-up default with the validator option installed, or the user attempted to increase Print Speed or Slew Speed above 6 IPS.	Change the Print Speed or Slew Speed value in the MEDIA CONTROL menu to 6 IPS or less when using the validator option, and save the new value as the power-up default.
TESTING HARDWARE PLEASE WAIT	Yes	Normal power-up message. Printer is running its initialization routine.	1. No action required. 2. If the printer does not complete initialization and continues displaying this message when the CT emulation is installed, the expansion CT board may not be connected to the controller PCBA.
Unscannable Code Check media	Yes	Data validation error: missing barcode.	Check the paper and ribbon for cleanliness, wrinkles, etc., or an obstructed validator beam. If there is no validator beam at all, or if the LED is not flashing as barcodes pass through the validator beam, recycle validator power. If the problem persists, contact your service representative.
Validator not communicating	Yes	The Validator Funct. = Enable in the VALIDATOR menu, but when the printer was first powered up it could not communicate with the validator.	Check that the validator signal cable is securely connected to the validator unit.
WAITING FOR PROGRAM DOWNLOAD	Yes	Normal message when the printer is powered up while holding down both the MENU key and the DOWN arrow key in preparation to download software to the printer.	1. Complete the downloading software procedure. See “Downloading Emulation And Operating System Software” on page 289. 2. Exit this procedure by cycling printer power.
WIRELESS ADAPTER NOT COMPATIBLE	No	The type of wireless card is incompatible with the printer software.	The PCMCIA radio card that you installed may be incompatible with the dual NIC interface in the printer. Verify the approved brand and model number of the radio card with your printer service provider and install the correct version. If using the correct radio card does not resolve this problem, call your service provider for further support.

A Specifications

Print Method

Table 18. Printing Specifications

	T5204 SL5204	T5304 SL5304	T5206	T5306	T5208	T5308
Print Resolution (dpi)	203	300	203	300	203	300
Min. Dot Size (sq. in)	.005 (.127 mm)	.0033 (.083 mm)	.005 (.127 mm)	.0033 (.083 mm)	.005 (.127 mm)	.0033 (.083 mm)
Bar Code Modulus (mils) Picket Fence Ladder	 5 - 127 10 -127	 3.3 - 110 10 - 110	 5 - 127 10 - 127	 3.3 - 110 10 - 110	 5 - 127 10 - 127	 3.3 - 110 10 - 110
Max. Print Speed (ips)	10	8	10	8	8	6
Max. Slew Speed (ips)	10	8	10	8	8	6
Max. Print Width (in.)	4.1 (104.1 mm)	4.1 (104.1 mm)	6.6 (167.6 mm)	6.6 (167.6 mm)	8.5 (215.9 mm)	8.5 (215.9 mm)
Flash Memory (MB) Standard	4	4	4	4	4	4
Flash Memory (MB) Maximum	10	10	10	10	10	10
DRAM (MB) Standard	8	8	8	8	8	8
DRAM (MB) Maximum	16	16	16	16	16	16
Max. Print Length (in.) at max. width, std. DRAM (1,2)	99 (2515 mm)	97 (2464 mm)	99 (2515 mm)	62 (1575 mm)	99 (2515 mm)	48 (1219 mm)
Max. Print Length (in.) at max. width, 16MB DRAM (2)	99 (2515 mm)	99 (2515 mm)	99 (2515 mm)	99 (2515 mm)	99 (2515 mm)	99 (2515 mm)

NOTES:
1. These figures are approximate and depend upon the active emulation.
2. These values may not be supported at maximum throughput.

Media

Table 19. Media - General Information

Type:	Roll-fed, die-cut continuous or fanfold labels, tags or tickets; most direct thermal or thermal transfer materials.
Supply Roll:	8 inch (203 mm) maximum diameter on 1.5-inch (37.5 mm) to 3-inch (76 mm) diameter cores.
Internal Rewinder:	Accepts up to a 5-inch diameter roll of label backing.
Label Material:	Thermal transfer plain-coated papers, vinyl, Mylar, metallized paper, non-woven fabric, fine woven fabric, thermal-visible light scannable paper, infrared scannable paper, thermal ticket/tag stock, thermally-sensitive plastic stock.
Media Sensing:	Horizontally moveable sensor assembly. When set to Gap, the assembly detects die-cut labels on liner media and notches and holes in tag stock. When set to Mark, it senses a black mark on the underside of tag or label stock. When set to Advanced Gap, it detects liner gaps between die cut labels with a dark background. When set to Advanced Notch, it detects notches or holes that interrupt a dark or black area on the underside of the media. When set to Disable, it senses no label indicators or ignores all existing label length indicators on the installed media.
Label Taken Sensor:	Detects when a printed label is at the printer exit throat. Used only for Tear-Off and Peel-Off Media Handling modes.
Automatic Label Peel-Off:	Peels and presents label to the operator, one at a time. Automatic Label Peel-Off is supported only when the internal rewinder is installed. (The internal rewinder is a factory- or field-installed option.)

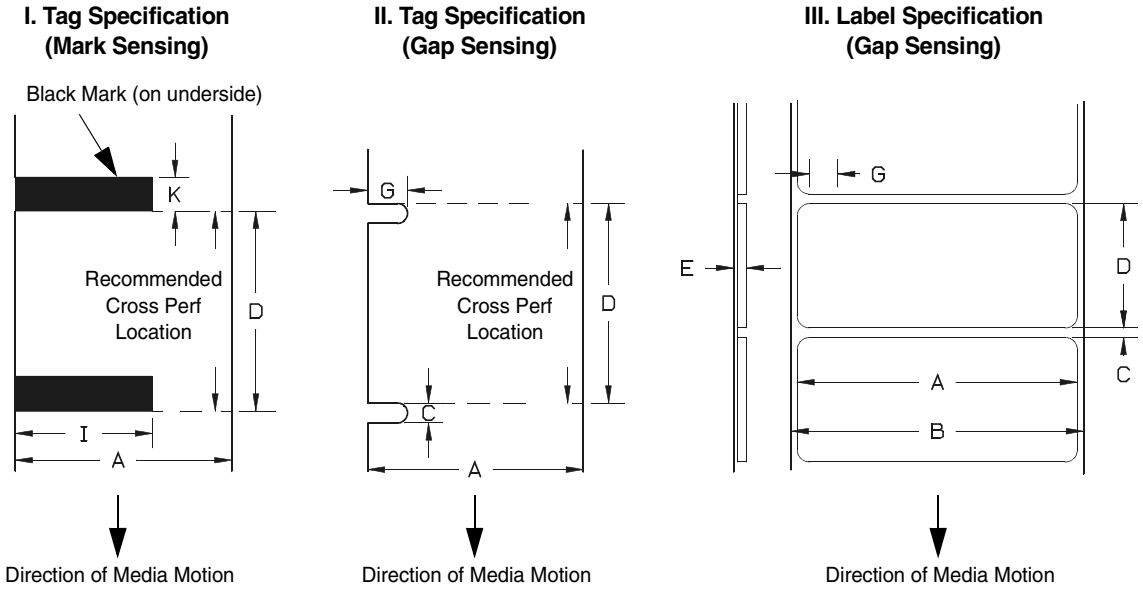


Figure 13. Media Dimensions

Table 20. Media Specifications

		T5X04 SL5X04	T5X06	T5X08
A	Label Width Range	0.75 -4.5 in. 19.1-114.3 mm	2.0-6.8 in. 50.8-172.7 mm	3.0-8.75 in. 76.2-222.3 mm
B	Backing Width Range	0.75-4.5 in. 19.1-114.3 mm	2.0-6.8 in. 19.1-114.3 mm	3.0-8.75 in. 19.1-114.3 mm
C	Min. Gap/Hole/Notch Height	0.10 in. 2.54 mm	0.10 in. 2.54 mm	0.10 in. 2.54 mm
K	Min. Refl. Mark Height	0.10 in. 2.54 mm	0.10 in. 2.54 mm	0.10 in. 2.54 mm
I	Min Refl. Mark Width	0.5 in. 12.7 mm	0.5 in. 12.7 mm	0.5 in. 12.7 mm
E	Media Thickness Range	.0025-.010 in. .0635-.254 mm	.0025-.010 in. .0635-.254 mm	.0025-.010 in. .0635-.254 mm
G	Width of Inter-label gap/hole	0.25-0.50 in. 6.35-12.7 mm	0.25-0.50 in. 6.35-12.7 mm	0.25-0.50 in. 6.35-12.7 mm
D	Media Length Range			
	Continuous/Batch Mode	0.25 in. (6.35mm) - 99 in. (2515mm)*		
	Tear-Off Strip Mode	0.25 in. (6.35mm) - 99 in. (2515mm)*		
	Tear-Off Mode	1 in. minimum (25.4 mm) - 99 in. (2515 mm)*		
	Peel-Off Mode	1 in. minimum (25.4 mm) - 99 in. (2515 mm)*(1)		
	Cut Mode	1 in. minimum (25.4 mm) - 99 in. (2515 mm)*		

These figures are approximate and depend upon the active emulation and application.
* 99 in. requires DRAM upgrade.
(1) 1.5 inch with validator support.

Ribbon

Table 21. Ribbon Specifications

	T5X04 SL5X04	T5X06	T5X08
Ribbon Width Range	0.75-4.5 in. 19 -114.3 mm	2.0-6.8 in. 50.8-172.7 mm	3.0-8.75 in. 76.2-222.25 mm
Max. Ribbon Length (m)	625	625	625

Indicators And Switches

Table 22. Indicators and Switches

Indicator Lights:	ONLINE, Job-In-Process
Switches:	POWER
Keys:	PAUSE, JOB SELECT/ - (Decrement), FEED/↑ (Up), TEST PRINT, ⋮☰ (Menu), ✘ (Cancel)/↓ (Down), ↵ (Enter)
Message Display:	2-row 16-characters per row for error messages, print status, and recalling stored formats

Memory

Table 23. Memory Specifications

Flash Memory (standard)	4MB SIMM installed on Controller PCBA
Flash Memory (optional)	10MB SIMM installed on Controller PCBA
DRAM (standard)	8MB SIMM installed on Controller PCBA
DRAM (optional)	16MB SIMM installed on Controller PCBA

Media Cutter Options

Cutters are designed to cut tags and label liner. Avoid cutting through the adhesive backed portion of any media.

Standard Cutter

The Standard Cutter is designed to cut *lightweight* tags and label liner.

Table 24. Standard Duty: 4 inch Model Only

Typical Life	> 750,000 cuts
Warranty	500,000 cuts
Environment	Same specifications as printer
Cutting Method	Rotating double-edged blade
Media Thickness Range	0.0025 to 0.007 in. (0.064 to 0.178 mm)
Media Width Range	0.75 to 4.5 in. (19.1 to 114.3 mm)
Media Length Range	1.00 to 99 in. (25.4 to 2515 mm)

Heavy Duty Cutter

The Heavy Duty Cutter is designed to cut tags and label liner.

Table 25. Heavy Duty: 4, 6, and 8 inch Models

Typical Life	> 1,000,000 cuts
Warranty	500,000 cuts
Environment	Same specifications as printer
Cutting Method	Rotating single-edged blade
Media Thickness Range	0.0025 to 0.010 in. (0.064 to 0.254 mm)
Media Width Range	Same range as printer
Media Length Range	1.00 to 99 in. (25.4 to 2515 mm)

Host Interfaces

Table 26. Host Interface Characteristics

1. Serial RS-232 or RS-422 at 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, or 115200 baud. 2. Parallel (Centronics compatible) or IEEE 1284 bi-directional. The RS-232 and RS-422 host interfaces shall have the following characteristics:	
Character Set:	ANSI® ASCII character set
Word Length:	Selectable 7-bit or 8-bit data format
Handshaking:	XON/XOFF (in receive mode only) and CTS/DTR
Input Buffer:	Selectable from 1k through 16 kbytes. XOFF is transmitted and DTR goes low when buffer is equal to or less than 25% of full. XON is transmitted and DTR goes high when buffer is 25% above empty. Characters are transmitted with no parity from the printer

Power

Table 27. Power Source and Grounding

Power Source:	115 or 230 VAC 50/60Hz switching power supply.
Grounding:	Unit must be connected to a properly grounded receptacle.

Table 28. Power Consumption

	4 inch printers		6 inch printers		8 inch printers	
	203 dpi 10 ips	**300 dpi 8 ips**	**203 dpi 10 ips**	**300 dpi 8 ips**	**203 dpi 8 ips**	**300 dpi 6 ips**
Energy Star (Power Saver Mode)	24 Watts	24 Watts	24 Watts	24 Watts	24 Watts	24 Watts
Standby	50 Watts	50 Watts	50 Watts	50 Watts	50 Watts	50 Watts
25% Print Density	142 Watts	143 Watts	205 Watts	175 Watts	213 Watts	212 Watts
50% Print Density	234 Watts	235 Watts	360 Watts	300 Watts	375 Watts	373 Watts

Environmental

Table 29. Environmental Information

Operating Temperature:	41° F to 104° F (5° C to 40° C)
Storage Temperature:	-40° F to 150° F (-40° C to 60° C)
Operating Humidity: Storage Humidity:	20% to 85%, non-condensing 5% to 85% non-condensing
Ventilation:	Free air movement
Dust:	Non-conducting, non-corrosive

Physical

Table 30. Physical Dimensions

	T5X04 SLX04	T5X06	T5X08
Outside Dimensions (in.)	13H x 11.7W x 20.5D	13H x 13.4W x 20.5D	13H x 15.4W x 20.5D
Max. Weight (lbs/kg)	39 lbs. 17.55 kg	45 lbs. 20.25 kg	48.5 lbs. 21.83 kg
Add 1.75" D with media guide installed Add 7.5" D and 6" H for validator option Add 1.4" D for media cutter option			

Acoustic Specifications

Table 31. T5000 Acoustic Noise Levels per ISO 9296

	T5X04 SLX04	T5X06	T5X08
Printing @ 6 IPS	68 dBA	62 dBA	62 dBA
Standby:	37 dBA	37 dBA	37 dBA

Maximum Page Length

The maximum page length allowed is dependent on the following factors:

- The software emulations installed.
- The DRAM memory installed.
- The DPI of the printhead. 300 DPI uses more memory than 203 DPI, therefore, 300 DPI printers have a smaller maximum page length than 203 DPI printers.
- The value of “Label Width” (under the QUICK SETUP or MEDIA CONTROL menu). As this value increases, the maximum page length decreases.
- The value of “Glob Mem Adjust” (under the PRINTER CONTROL menu). As this value increases, page memory and the maximum page length decreases. The allowable range for this option changes based on the DRAM memory installed. Note that this menu item is independent of a configuration (that is, it does not need to be saved under a configuration number), and the printer must be rebooted for it to take effect.

Also be aware that a maximum page length is based on the ability of the printer to reserve at least one page at the specified length. However, the printer needs two pages to achieve full throughput. Therefore, maximum page lengths less than 99 inches should be divided in half when considering throughput. Maximum page lengths at 99 inches can achieve full throughput at higher values than 49.5 inches.

B *Printer Options*

Options are offered with the printer to enhance its capabilities and to provide a large degree of application flexibility. A description of the option complement is given below. Field-installable options include installation instructions.

Hardware Options

Memory Expansion

The printer internal Flash memory can be upgraded from a 4MB SIMM to a 10MB SIMM, providing additional memory for forms, logos, and fonts.

The internal DRAM memory can be upgraded from a 8MB SIMM to a 16MB SIMM, providing additional memory for longer label formats.

The printer can be ordered with either or both memory options installed or can be field installed by an authorized service representative at a later date.

Media Cutter

The printer may be ordered with a cutter mechanism installed (for cutting tags and label liner), or the option can be installed by an authorized service representative at a later date. Once installed, the printer can be configured to automatically cut media after each or a specified number of labels is printed.

A Standard Duty 4 inch model and Heavy-Duty 4, 6 and 8 inch cutter models are available. See Appendix A for details.

Media Cutter Tray

This option is used exclusively with the media cutter option to collect cut labels or tag stock. This option can be field installed by the operator.

Online Data Validator (ODV™)

This option provides the capability for verifying printed barcode quality during the printing process.

The printer may be ordered with the Online Barcode Validator installed, or the option can be field installed by an authorized service representative.

Internal Rewinder

The internal rewinder supports Peel-Off and Batch Rewind Media Handling modes. The printer can be ordered with a rewinder or it can be field installed at a later date by an authorized service representative.

Interface Options

Coax/Twinax Host Interface

The coax/twinax host interface option mounts inside the printer and functions as a protocol converter to allow the direct connection of the printer to a host computer that uses either a coax or a twinax data interface. The printer may be ordered with the coax/twinax option installed, or it can be field installed by an authorized service representative.

Network Interface Card (NIC)

This option permits placing the printer on a LAN rather than attaching it directly to a host system. It is mounted inside the printer. The printer may be ordered with a NIC installed, or it can be field installed by an authorized service representative. The parallel port is no longer accessible when the NIC option is installed.

Dual NIC (10/100BaseT & 802.11b wireless)

The Dual NIC provide both 10/100BaseT or 802.11b connectivity in one. The card provides wireless connectivity without expensive cabling and reconfigurations required from a wired network. It also provides 10/100 BaseT for wired network and wireless back up. The remote management software, a powerful printer management tool, is standard with the Dual NIC (10/100BaseT & 802.11b wireless). The parallel port is no longer accessible when the Dual NIC option is installed.

IPDS for Use with Twinax Host Interface

This option supports the Intelligent Printer Data Stream (IPDS) language to allow direct connection of the printer to an IBM host computer that uses the twinax data interface. The printer may be ordered with this option installed and the required hardware to support it, or it can be field installed by an authorized service representative at a later date. The printer must have a Coax/Twinax interface, 300 DPI Printhead, and 16 MB DRAM installed to support this field installed option.

IPDS for Use with a NIC

This option supports the IPDS language to allow a LAN connection. The printer may be ordered with this option and the required hardware to support it, or it can be field installed by an authorized service representative. The printer must have a NIC, 300 DPI Printhead, and 16 MB DRAM installed to support this field installed option.

IPDS for Use with a NIC and Twinax Host Interface

This option supports the IPDS language to allow a LAN connection as well as a direct connection of the printer to an IBM host computer that uses the twinax data interface. The printer may be ordered with this option installed and the required hardware to support it, or it can be field installed by an authorized service representative. The printer must have a NIC, Coax/Twinax interface, 300 DPI printhead, and 16 MB DRAM installed to support this field installed option.

General Purpose Input/Ouput (GPIO)

GPIO is both hardware and software. The hardware is the actual IO board to be mounted in the printer, and the software is the GPIO Manager which is part of the Printronix Remote Management Software Advanced Tool Kit. The GPIO hardware is a printed circuit board containing optically isolated inputs and outputs as well as relays. The GPIO software is both a printer resident GPIO event parser and a PC-based GPIO manager that allows the user to define how the general purpose IO hardware should behave for the given application.

Supplies And Accessories

The best printing solution is achieved when the printer, ribbon, and media are matched to the application requirements. The use of Genuine Printronix Thermal Media and Ribbons will ensure optimum image quality, consistent bar code performance, and extended life of the printhead.

Please refer to the Printronix Media Selection Guide for details concerning the application suitability for all media and ribbon products. To obtain a copy of this guide, or for any other questions concerning Genuine Printronix Thermal Supplies, please call:

Americas:	(800) 733-1900	Fax: (714) 368-2354
Europe, Middle East, Africa:	(33) 1-46-25-1900	Fax: (33) 1-46-25-1919
Asia:	(65) 548-4116	Fax: (65) 546-1588

Or visit our website at **www.printronix.com**.

Genuine Printronix Thermal Transfer Ribbons

The following is a list of Genuine Printronix Thermal Transfer ribbons:

Printronix Wide Spectrum Wax Ribbon 8300

Provides superior print quality for coated and uncoated paper and tag stocks.

Printronix Wax Resin Blend Ribbon 8500

Provides excellent high speed print quality with premium durability performance on a wide range of thermal transfer receptive papers and films.

Printronix Flood-Coat Specialty Wax Resin Blend Ribbon 8550

Designed for use on spot-coated and flood-coated labels. With this ribbon, the need for protective varnishes on flood-coated labels is eliminated, which can reduce the cost of labels.

Printronix Specialty Resin Ribbon 8600

A premium resin formula for excellent image and scuff resistance, while achieving premium print quality on a wide range of synthetic films and coated papers.

Printronix Harsh Environment Resin Ribbon 8700

Provides the highest heat, chemical, and abrasion resistance for use with high-end synthetic facestocks. When used with the proper polyester media, meets UL/CSA regulatory requirements.

Printronix Gasoline Resistant Specialty Resin Ribbon 8770

Designed for high temperature and solvent resistance applications using synthetic facestocks media such as polypropylene, polyethylene, and polyester.

All ribbons are available in widths of: 2.36” (60mm), 3.15” (80mm), 4.33” (110mm), 5.12" (130mm), 6.00" (152.4mm), 6.70" (171mm), and 8.67" (220mm).

Genuine Printronix Media

Printronix provides a wide variety of sizes, colors, and shapes of labels and tags readily available to meet all of your labelling needs. The Printronix Expanded Die Library details hundreds of label sizes and configurations which are quickly obtainable through the Printronix custom order system without the typical added costs and delays associated with the creation and tooling of a special die to match your requirements.

Genuine Printronix ThermaLine Media		
ThermaLine Media Type	**Description**	**Typical Applications**
Media 110	Premium coated thermal transfer paper Permanent acrylic adhesive	Compliance shipping, general warehouse, address, AIAG, LOGMARS, product ID, hardware parts supply
Media 120R	Premium coated thermal transfer paper Removable adhesive	Temporary product ID, pricing, point of sale, shelf marking labels which can be cleanly removed
Media 180T	7.0 mil coated thermal transfer paper tagstock	Retail hangtag, warehouse bin and pouch inserts, inventory control, work in process, general purpose tag
Media 210	Economy direct thermal paper Permanent acrylic adhesive	Short life deli, grocery, shipping, work in process
Media 220	Premium direct thermal paper Permanent acrylic adhesive	Compliance shipping, general warehouse, address, AIAG, LOGMARS, product ID
Media 270	Infra-Red scannable direct paper Permanent acrylic adhesive	Infra-red scannability for overnight shipping and grocery environments
Media 280T	7 mil direct thermal paper tagstock	Economical ticket and tag stock for general retail and industrial use
Media 410	3.3 mil direct thermal film Permanent acrylic adhesive	Excellent moisture resistance and tear strength for applications such as baggage tags, etc.
Media 510	4.0 mil white thermal transfer polyolefin Permanent acrylic adhesive	Durable satin finish for chemical pails and drums and general outdoor and industrial use
Media 520	Smudge proof white thermal transfer polyolefin Permanent acrylic adhesive	Outdoor exposures especially chemical drums, etc. provides a markable soundproof topcoat
Media 580T	8.5 mil smudge proof thermal transfer Poly tagstock	Outdoor nursery, lumberyard, and industrial environment hangtag and insert tag
Media 700's	2.0 mil polyester labelstock thermal transfer White, bright & matte chrome	UL/CSA compliant nameplate labels, harsh environment and laboratory labels

Besides the standard roll label configuration, Genuine Printronix ThermaLine labels are also available in fanfold configurations.

Type	Media (Stock)	Ribbon	Features	Typical Applications
Direct Thermal	Paper Label Tag Synthetic Label	Not Used	Low cost. Ease of use. Low environmental durability. Limited label life. Will fade and/or discolor when exposed to heat, sunlight, or chemicals.	Shipping. Inventory tracking.
Thermal Transfer	Paper Label Tag	Printronix Wide Spectrum Wax	Lowest cost thermal transfer combination. Most commonly used. Low environmental durability. Low abrasion resistance. Longer life than direct thermal.	Shipping. Inventory tracking. Product labeling. Compliance labeling.
Thermal Transfer	Paper Label Tag Synthetic Label Tyvek® and Valeron®	Printronix Wax Resin Blend	Mid-range wax resin performance and characteristics at economy wax prices. Darker, razor-sharp, smudge-proof images.	Same as economy applications with advantage of supporting Polypropylene, Polyethylene, Polyolefin, and Valeron media.
Thermal Transfer	Paper Label Tag Synthetic Label	Printronix Specialty Resin	Better environmental durability. Better abrasion resistance than wax. More expensive than wax. Good aesthetic appearance.	Retail applications where labels are handled. Excellent for most applications. Compliance labeling.
Thermal Transfer	Synthetic Label	Printronix Harsh Environment Resin	High environmental durability. High physical durability. Excellent aesthetic appearance. Most expensive label/tag combination.	High temperature environments. Medical applications. Outdoor environments. Environments with chemicals. Compliance labeling.

Accessories

Field installable accessories available for your thermal printer are listed below. Contact your authorized supplier for more details.

- Media Cutter, Standard Duty 4 inch
- Media Cutter, Heavy-Duty 4, 6, and 8 inch
- Media Cutter Tray (used with a Media Cutter option)
- Coax/Twinax Host Interface
- Network Interface Card
- Online Barcode Validator
- Memory Expansion, 16 MB DRAM SIMM, and 10 MB Flash SIMM
- Power Cart
- Dual NIC (Wireless)
- Internal Rewind Kit
- PrintNet 10/100 Base-T (External or Internal)
- *Maintenance Manual*
- *LP+ Programmer's Reference Manual*
- *IGP/PGL Programmer's Reference Manual*
- *IGP/VGL Programmer's Reference Manual*
- *C/T Programmer's Reference Manual*
- *Network Interface Card User's Manual*
- *Remote Management Software User's Manual*

C ASCII Control Codes

Char	Dec	Hex	Char	Dec	Hex	Char	Dec	Hex	Char	Dec	Hex
NUL	0	00		32	20	@	64	40	`	96	60
SOH	1	01	!	33	21	A	65	41	a	97	61
STX	2	02	+	34	22	B	66	42	b	98	62
EXT	3	03	#	35	23	C	67	43	c	99	63
EOT	4	04	$	36	24	D	68	44	d	100	64
ENQ	5	05	%	37	25	E	69	45	e	101	65
ACK	6	06	&	38	26	F	70	46	f	102	66
BEL	7	07	+	39	27	G	71	47	g	103	67
BS	8	08	(	40	28	H	72	48	h	104	68
HT	9	09	)	41	29	I	73	49	i	105	69
LF	10	0A	*	42	2A	J	74	4A	j	106	6A
VT	11	0B	+	43	2B	K	75	4B	k	107	6B
FF	12	0C	,	44	2C	L	76	4C	l	108	6C
CR	13	0D	-	45	2D	M	77	4D	m	109	6D
SO	14	0E	.	46	2E	N	78	4E	n	110	6E
SI	15	0F	/	47	2F	O	79	4F	o	111	6F
DLE	16	10	0	48	30	P	80	50	p	112	70
DC1	17	11	1	49	31	Q	81	51	q	113	71
DC2	18	12	2	50	32	R	82	52	r	114	72
DC3	19	13	3	51	33	S	83	53	s	115	73
DC4	20	14	4	52	34	T	84	54	t	116	74
NAK	21	15	5	53	35	U	85	55	u	117	75
SYN	22	16	6	54	36	V	86	56	v	118	76
ETB	23	17	7	55	37	W	87	57	w	119	77
CAN	24	18	8	56	38	X	88	58	x	120	78
EM	25	19	9	57	39	Y	89	59	y	121	79
SUB	26	1A	:	58	3A	Z	90	5A	z	122	7A
ESC	27	1B	;	59	3B	[	91	5B	{	123	7B
FS	28	1C	<	60	3C	\	92	5C	|	124	7C
GS	29	1D	=	61	3D	]	93	5D	}	125	7D

Char	Dec	Hex	Char	Dec	Hex	Char	Dec	Hex	Char	Dec	Hex
RS	30	1E	>	62	3E	^	94	5E	~	126	7E
US	31	1F	?	63	3F	_	95	5F		127	7F
Ç	128	80	á	160	A0		192	C0	+	224	E0
ü	129	81	í	161	A1		193	C1	_	225	E1
é	130	82	ó	162	A2		194	C2	+	226	E2
â	131	83	ú	163	A3		195	C3	+	227	E3
ä	132	84	ñ	164	A4		196	C4	_	228	E4
à	133	85	Ñ	165	A5		197	C5	+	229	E5
å	134	86	ª	166	A6	_	198	C6		230	E6
ç	135	87	_	167	A7	+	199	C7	•	231	E7
ê	136	88	¿	168	A8		200	C8	_	232	E8
ë	137	89	«	169	A9		201	C9	+	233	E9
è	138	8A		170	AA		202	CA	_	234	EA
ï	139	8B	1/2	171	AB		203	CB	+	235	EB
î	140	8C	1/4	172	AC		204	CC	_	236	EC
ì	141	8D	¡	173	AD		205	CD	_	237	ED
Ä	142	8E		174	AE		206	CE		238	EE
Å	143	8F		175	AF		207	CF		239	EF
É	144	90		176	B0	_	208	D0		240	F0
æ	145	91		177	B1	+	209	D1	_	241	F1
Æ	146	92	@	178	B2	+	210	D2		242	F2
ô	147	93	#	179	B3	+	211	D3	3/4	243	F3
ö	148	94		180	B4	+	212	D4		244	F4
ò	149	95	+	181	B5		213	D5		245	F5
û	150	96	+	182	B6	–	214	D6	_	246	F6
ù	151	97	+	183	B7	+	215	D7		247	F7
ÿ	152	98	_	184	B8	+	216	D8	º	248	F8
Ö	153	99	1	185	B9		217	D9	¿	249	F9
Ü	154	9A		186	BA		218	DA	I	250	FA
°	155	9B	»	187	BB		219	DB		251	FB
£	156	9C		188	BC		220	DC		252	FC
+	157	9D	¢	189	BD		221	DD		253	FD
x	158	9E	¥	190	BE	+	222	DE		254	FE
_	159	9F		191	BF		223	DF		255	FF

NOTE: For the hardware handshake XON/XOFF commands:
XON = Ctrl Q (DC1)
XOFF = Ctrl S (DC3)

D *Standard And Heavy-Duty Media Cutter Installation*

Prepare The Printer

NOTE: Before you begin, please note that steps 1 through 3 below are applicable for *both* the standard and heavy-duty media cutters. When you get to step 4, you will directed to separate instructions specific to the standard or heavy-duty cutter.

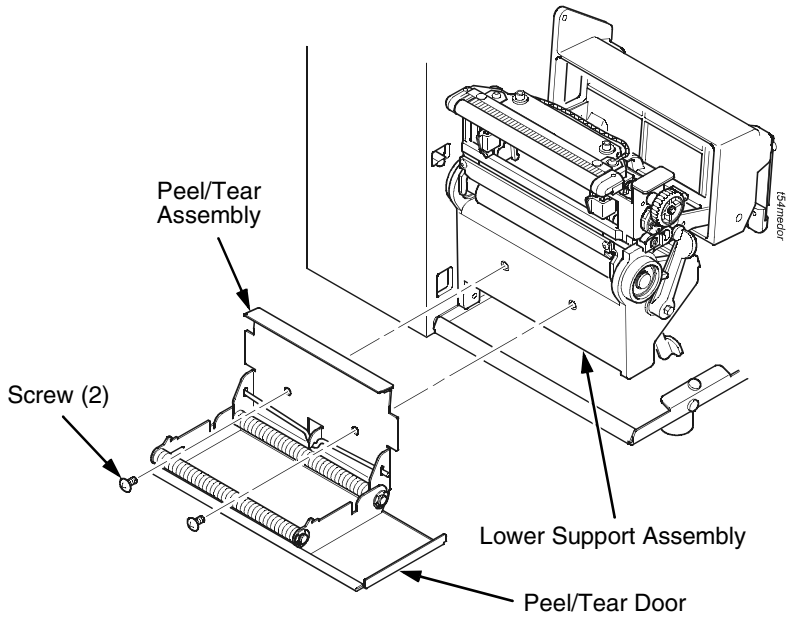


Figure 1. Peel/Tear Assembly

1. Set the printer power switch to O (Off).
2. Open the peel/tear door by pulling it upward, then forward.
3. Using the appropriate metric hex key, remove the two screws attaching the peel/tear assembly to the lower support assembly.

NOTE: Keep the two screws you have removed; you will use them to attach the cutter assembly to the lower support assembly.

4. **To install a standard cutter**, go to “Installing The Standard Cutter” on page 356. **To install a heavy-duty cutter**, go to “Installing The Heavy-Duty Cutter” on page 358.

Installing The Standard Cutter

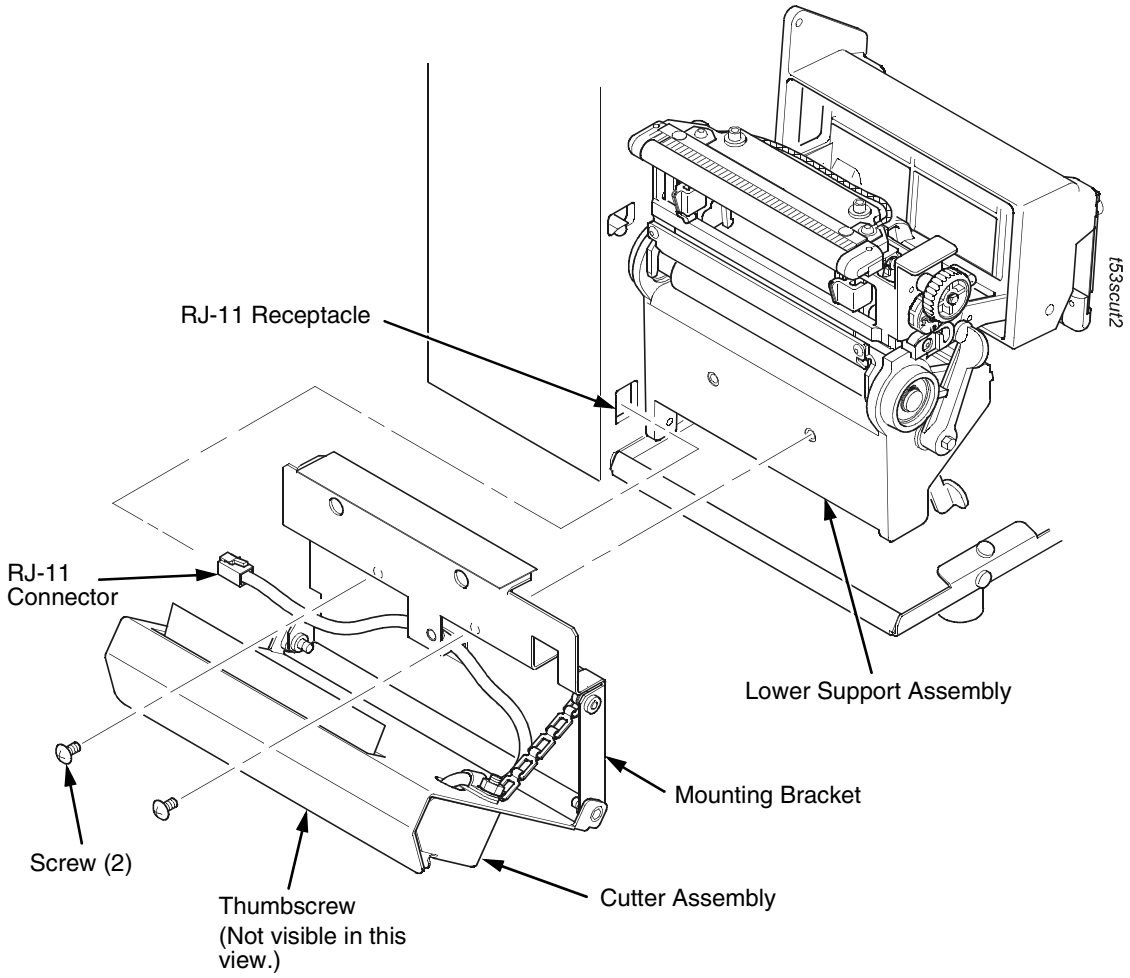


Figure 2. Standard Cutter Assembly

1. Loosen the knurled thumbscrew on the front of the cutter and swing open the cutter assembly from the cutter assembly mounting bracket.
2. Place the cutter assembly in position.
3. Install the two screws using the appropriate metric hex key.
4. Plug the RJ-11 connector into the RJ-11 receptacle.
5. Place the cutter assembly into the up (closed) position and secure it by tightening the knurled thumbscrew.

Restore The Printer To Operation

1. Set the printer power switch to | (ON).
2. Press ⋮☰ to place the printer in Menu Mode.
3. Press the ↓ and ↵ keys at the same time until “ENTER SWITCH UNLOCKED” appears on the printer display.
4. Press ⋮☰ until “PRINTER CONTROL” displays.
5. Press ↑ until “Admin User” displays.
6. Press + or - until “Enable” displays.
7. Press ↵ to select the “Enable” option. An asterisk (*) appears next to “Enable.”
8. Press ⋮☰ until “MEDIA CONTROL” displays.
9. Press ↓ until “Media Handling” displays.
10. Press + or - until “Cut” displays.
11. Press ↵ to select “Cut.” An asterisk (*) displays next to “Cut.”
12. Press ↓ until “Cutter Type” displays.
13. Press + or - until “Standard” displays.
14. Press ↵ to select “Standard.” An asterisk (*) displays next to “Standard.”
15. Relock the ↵ key by pressing ↓ and ↵ at the same time, then press PAUSE to put the printer back online.
16. If the bar code validator is installed, adjust the validator beam. (Refer to “VALIDATOR” on page 108.)
17. Make sure any media sticking out of the platen goes in the cutter entrance slot.
18. Test the printer cutting operation and print quality by selecting the **Diagnostics** → **Printer Tests** menu and printing one of the test patterns. (Refer to “DIAGNOSTICS” on page 249.)
19. To save the configuration parameters, refer to “Saving A Configuration” on page 84.

Installing The Heavy-Duty Cutter

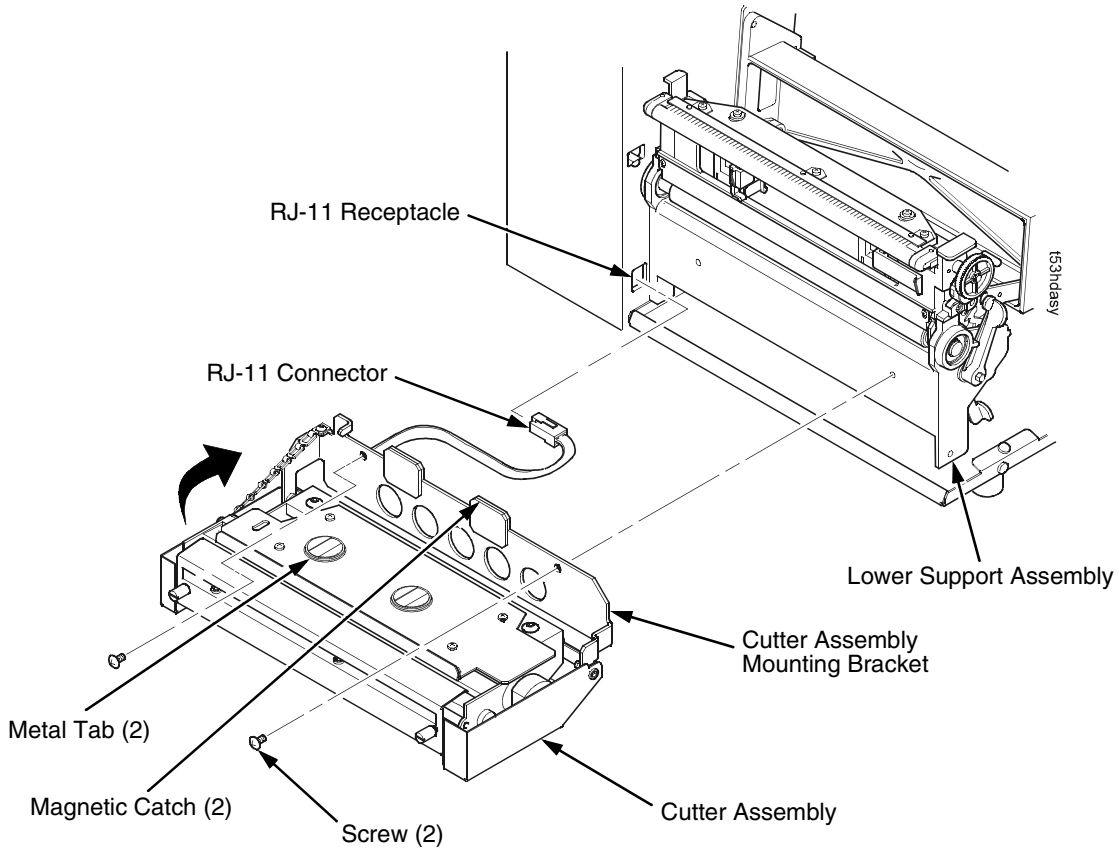


Figure 3. Heavy-Duty Cutter Assembly

1. Plug the RJ-11 connector into the RJ-11 receptacle.
2. Pull the metal tabs from the magnetic catches and swing open the cutter assembly mounting bracket from the cutter assembly.
3. Place the cutter assembly in position.
4. Install the two screws using the appropriate metric hex key.
5. Place the cutter assembly into the up (closed) position.

NOTE: The printer cannot detect the presence of the cutter unless the cutter is in the up (closed) position and the cutter top cover is installed when the printer is powered on.

Restore The Printer To Operation

1. Set the printer power switch to | (ON).
2. Press ⋮☰ to place the printer in Menu Mode.
3. Press the ↓ and ↵ keys at the same time until “ENTER SWITCH UNLOCKED” appears on the printer display.
4. Press ⋮☰ until “PRINTER CONTROL” displays.
5. Press ↑ until “Admin User” displays.
6. Press + or - until “Enable” displays.
7. Press ↵ to select the “Enable” option. An asterisk (*) appears next to “Enable.”
8. Press ⋮☰ until “MEDIA CONTROL” displays.
9. Press ↓ until “Media Handling” displays.
10. Press + or - until the “Cut” option displays.
11. Press ↵ to select “Cut.” An asterisk (*) displays next to “Cut.”
12. Press ↓ until “Cutter Type” displays.
13. Press + or - until “Heavy-Duty” displays.
14. Press ↵ to select “Heavy-Duty.” An asterisk (*) displays next to “Heavy-Duty.”
15. Relock the ↵ key by pressing ↓ and ↵ at the same time, then press PAUSE to put the printer back online.
16. If the bar code validator is installed, adjust the validator beam. (Refer to “VALIDATOR” on page 108.)
17. Make sure any media sticking out of the platen goes in the cutter entrance slot.
18. Test the printer cutting operation and print quality by selecting the **Diagnostics** → **Printer Tests** menu and printing one of the test patterns. (Refer to “DIAGNOSTICS” on page 249.)
19. To save the configuration parameters, refer to “Saving A Configuration” on page 84.

Removing The Media Cutter

1. Set the printer power to O (OFF).
2. Pull the cutter assembly to the down (open) position.
3. Using the appropriate metric hex key, remove the two screws securing the cutter bracket to the lower support assembly.
4. Unplug the RJ-11 connector from the RJ-11 receptacle.
5. Remove the media cutter from the printer.
6. Install the front door assembly on the printer lower support assembly.

E *Media Cutter Tray Installation*

Assembling The Media Cutter Tray

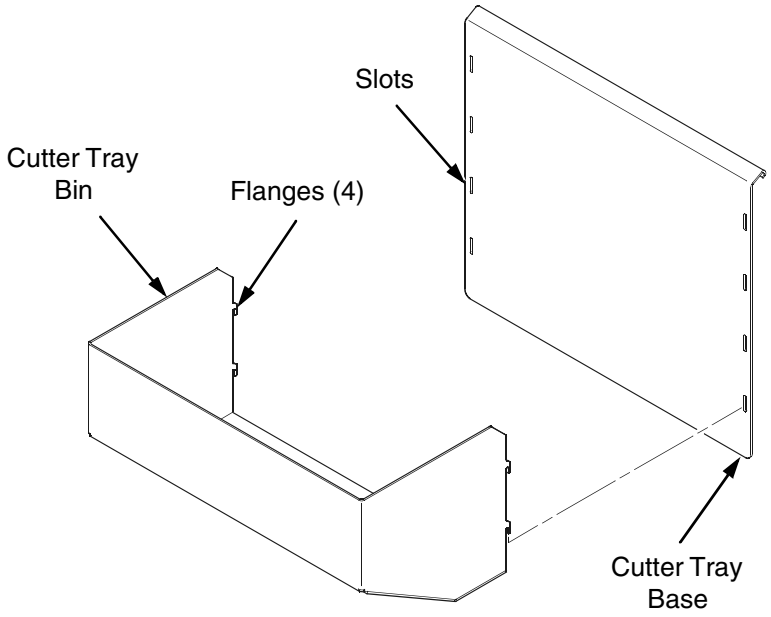


Figure 1. Attaching the Cutter Tray Bin to the Cutter Tray Base

1. Align the flanges of the cutter tray bin with the slots in the cutter tray base.
2. Push the flanges into the slots, then push the cutter tray bin downward to secure it.
3. Attach the cutter tray bin in a position so that the labels will not interfere with cutter operation. (For longer labels, attach the cutter tray bin to a lower position; for shorter labels, attach it to a higher position.)

Installing The Media Cutter Tray

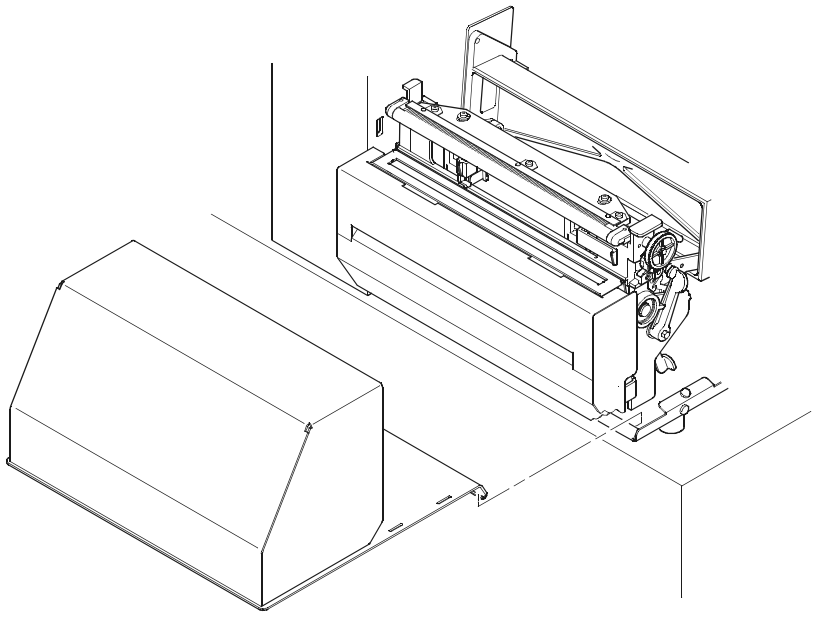


Figure 2. Placing the Media Tray Cutter in Position

1. Position the output area of the printer adjacent to the edge of the supporting table or stand.
2. Open the media cover and slide the lip of the media cutter tray over the lip of the printer base pan.

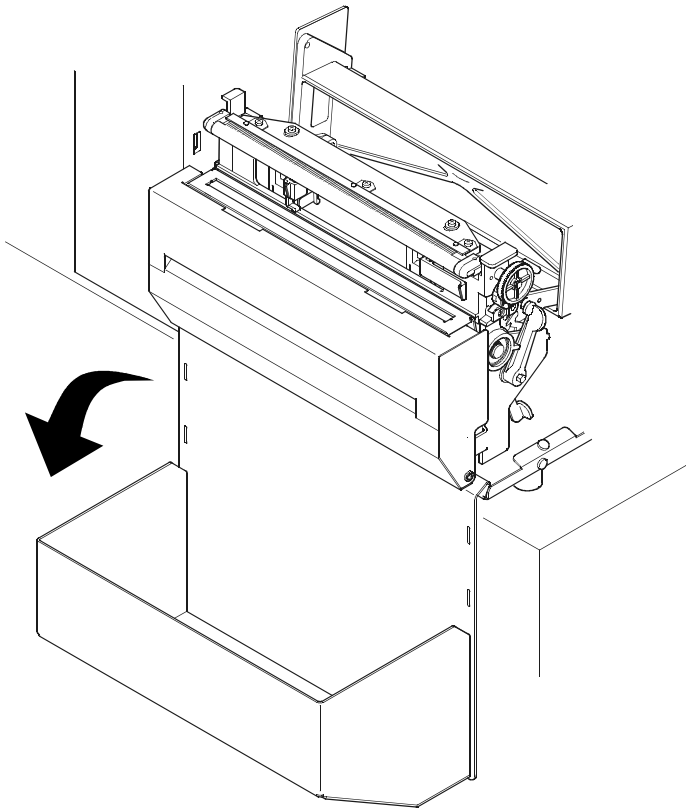


Figure 3. Installing the Media Cutter Tray

3. Rotate the media cutter tray into position with the tray resting against the table.
4. Close the media cover.

F *PPI1 and PPI2 Menu Conversions*

When substituting a Zebra Xi III model printer with a T5000e printer, refer to the PPI1 conversion table beginning on page 365.

When substituting a TEC B-470/870 model printer with a T5000e printer, refer to the PPI2 conversion table beginning on page 371.

Table 32: PPI1 Menu

Zebra *Xi III* Series	T5000e with PPI1 Emulation
Darkness - (0 to +30) **+10***. Darkness of image on label.	**QUICK SETUP Menu,** **Print Intensity -** *(-15 to +15)* ***-3****
Tear Off - (-120 to +120) **+0***. Adjusts Tear Off, Peel-Off and Cut position in Dot Rows.	**QUICK SETUP Menu,** **Paper Feed Shift -** (-0.50 to+12.8) **0.00 Inch***. Adjusts Tear Off, Tear-Off Strip, Peel-Off & Cut position in Inches or MM.
Print Mode – **Rewind** **Tear-Off** **Peel-Off** **Cutter** **Applicator**	**QUICK SETUP Menu,** **Media Handling** - **Continuous** (same as Zebra Rewind) **Tear-Off Strip*** (same as Zebra Tear-Off) **Peel-Off** (same as Zebra Peel-Off) **Cut** (same as Zebra Cutter) **Tear-Off** (similar to Zebra Peel-Off) **N/A** Applicator N/A on T5000e

Table 32: PPI1 Menu (continued)

Zebra *XiIII* Series	T5000e with PPI1 Emulation
Media Type - **Continuous*,** Non-Continuous. **Sensor Type** - **Web** - Liner gap, notch or hole. **NOTE:** Media Type must = Non-Continuous. **Mark** - Black mark on underside of label (Media Type must = Non-Continuous).	**QUICK SETUP Menu,** **Gap/Mark Sensor-** **Disable***- Same as Zebra Continuous Media Type (no label length indicators). Non-Continuous N/A. Assumed when Gap, Adv Gap or Adv Notch selected. **NOTE:** Use Gap, Adv Gap or Adv Notch for Zebra Web. **NOTE:** No Media Type setting is available or required. **Gap** - Liner gap, notch or hole. **Adv Gap** - Use w/dark background labels **Adv Notch** - Use with dark background labels. **Mark** - Black mark on underside of label. No Media Type setting avail. or required.
Print Method – **Transfer***- Use of ribbon. **Direct** - No ribbon used.	**QUICK SETUP Menu,** **Print Mode** - **Transfer*** or **Direct.**
Print Width - Width of image to be printed in Inches, MM or Dots. Printer width dependent.	**QUICK SETUP Menu,** **Label Width** - Width of image to be printed in Inches or MM. Printer width dependent.
Label Length - Printable length of label in Inches or MM.	**QUICK SETUP Menu,** **Label Length** - Printable length of label in Inches or MM.
Maximum Length - Used to assist in media calibration only.	**CALIBRATE CTRL Menu,** **Use Label Length –** (**Enable***) Uses Label Length value in QUICK SETUP menu to assist in Auto Calibrate procedure.
Parallel Comm. - **Parallel*** Twinax/Coax (option)	**PARALLEL PORT Menu,** **Port Type - IEEE 1284***, Disable or Centronics. **NOTE:** Use C/T PORT Menu if Coax/Twinax option installed.
Serial Comm. - **RS232*,** RS422/485 or RS485 multidrop.	**SERIAL PORT Menu,** **Port Type -** **RS232***, RS422 or Disable.
Baud - (110 - 57600) **9600***	**Baud Rate -** (600 - 115200) **9600***
Data Bits - 7-bits* or 8-bits	**Word Length** 7 or **8***
Parity - (**Even*,** Odd or None)	**Parity -** (Even, Odd or **None***)
Stop Bits - **1 stop bit*** or 2 stop bits	**Stop Bits - 1*** or 2
Host Handshake - **XON/XOFF*,** DTR/DSR **Protocol - None*,** Zebra or ACK/NAK	**Data Protocol -** **XON/XOFF***, ETX/ACK, ACK/NAK, Series 1 Char, Series 2 Char or DTR

Table 32: PPI1 Menu (continued)

Zebra *XiIII* Series	T5000e with PPI1 Emulation
Network ID (**000*** - 999) used for RS-422/ RS-485 Network only.	**N/A**
Communications - **Normal Mode*** - Prints label image. **Diagnostics** - All data sent from host printed in ASCII hex chars.	**NOTE:** Ptr Defaults to **Normal Mode** Comm. **Hex Dump** (same as Zebra Diagnostic Mode) can be Enabled in **DIAGNOSTIC Menu**.
Control Prefix - (00 – FF) Hex **7E***	**IGP/PPI1 SETUP Menu,** **Command Prefix** - (1-255) **126***. = Hex **7E***
Format Prefix - (00-FF) Hex **5E***	**Label Prefix** - (1 to 255) **94***. **=** Hex **5E***
Delimiter Char. - (00-FF) Hex **2C***	**Delimiter** - (1 to 255) **44***. **=** Hex **2C***
ZPL Mode - ZPLII*, ZPL	**ZPL Compatibility** - **ZPL-II*,** ZPL-1
Media Power Up - Media action when the printer is powered up. **Feed*** - Feeds a label to1st web. **Calibration** - Recalibrates media when printer is powered up. **Length** - Determines length of label. **No Motion** - Media does not move.	**CALIBRATE CTRL Menu,** **NOTE:** T5000e auto feeds a blank label to 1st web (gap) when first print job is sent. **Pwr Up Auto-Cal** - (**Disable*,** Enable) **Disable*** - No recalibrate at power-up. **Enable** - Recalibrates media when printer is powered up. **MEDIA CONTROL Menu,** **Set Label Length -** **Manual*** - Label Length set in menu. **Automatic** - Auto Calibrate Sensed Distance value used to set Label Length. **N/A**
Head Close - Media action after the print-head is closed. **Feed*** - Feeds a label to1st web. **Calibration** - Recalibrates media. **Length** - Determines length of label. **No Motion** - Media does not move.	**N/A** (No menu option available). **NOTE**: After printhead is closed, T5000e auto feeds a blank label to first web (gap) when first print job is sent. **N/A** **N/A** **N/A**
Backfeed - (**Default*,** after, before, 10 to 90%, off). Establishes when & how much label backfeed occurs after a label is cut or peeled-off.	**N/A** Distance back to TOF position of label under printhead is auto controlled by T5000e regardless of Paper Feed Shift value when using; Cut, Tear-Off, Tear-Off Strip & Peel-Off Media Handling modes.

Table 32: PPI1 Menu (continued)

Zebra *XiIII* Series	T5000e with PPI1 Emulation
Label Top - (-120 to +120 dot rows) **+00***. Adjusts vertical print position on label.	**QUICK SETUP Menu,** **Ver Image Shift** - (-1 to+12.8") **0.0*"**. Adjusts vertical print position on label. Or **IGP/PPI1 SETUP Menu,** **Top Position -** (-100 to +100 dots/inch) **0 dots/inch***. Adj vert. position in dot/in. **NOTE:** Only avail. in later version SW**.**
Left Position - (-9999 to +9999) **0000*.** Adjusts image horizontally from left edge of label in dots. (+) shifts image left. (-) shifts to right.	**QUICK SETUP Menu,** **Hor Image Shift -** (-1.0 to +1.0) **0.0"***. Adjusts image horizontally from left edge of label in inches. (+) shifts image left. (-) shifts image right. Or **IGP/PPI1 SETUP Menu,** **Left Position -** (-1000 to +1000 dots) **0 dots*.** Adjusts image horiz. in dots. **NOTE:** Only avail. in later version SW**.**
Head Test Count- (**0000***-9999) 0000 disables test.	**DIAGNOSTIC Menu,** **Ptr Media Dist** - **Inches*,** MM.
Head Resistor - Must be updated when printhead changed.	**NOTE:** Head Resistance detected & updated automatically by SW.
Verifier Port - How printer reacts to Optional On-Line Verifier. **Off*** - Verifier port is off. **1 VER-RPRINT** - Label reprinted if error detected. **2 VER-THRUPUT** - Allows greatest throughput but may not indicate verification error immediately.	**Off -** Default if no validator installed. **VALIDATOR Menu (Opt),** **Validator Funct. - Enable*,** Disable. Automatically Enabled when opt installed. Disable = Validator turned off. **Validator Action** - **Retry Form*** - Label reprinted if error detected.
Applicator Port	**N/A**
Web S. - Auto set during calibrate.	Automatically set during Auto Calibrate.
Media S. Auto set during calibrate.	Automatically set during Auto Calibrate.
Ribbon S. - Auto set during calibrate.	Automatically set after power up, while printing and when printhead is opened then closed.
Mark S. - Auto set during calibrate.	Automatically set during Auto Calibrate.
Mark Med S. - Auto set during calibrate.	Automatically set during Auto Calibrate.
Media LED - Automatically set during calibrate.	Automatically set during Auto Calibrate.

Table 32: PPI1 Menu (continued)

Zebra *XiIII* Series	T5000e with PPI1 Emulation
Ribbon LED - Automatically set during calibrate.	Automatically set during Auto Calibrate.
Mark LED - Automatically set during calibrate.	Automatically set during Auto Calibrate
LCD Adjust- Adj. display brightness.	**N/A**
Resolution - Full*, Half.	**IGP/PPI1 SETUP Menu,** **Resolution Mode - Full***, Half
Firmware - Firmware version & part number printed.	**DIAGNOSTIC Menu,** **Software Build** & **Config printout**
Language - Sets the display language. **English***, Spanish, French, German, Italian, Norwegian, Portuguese, Swedish, Danish, Spanish2, Dutch, Finnish, Custom.	**PRINTER CONTROL Menu, Display Language - English***, Spanish, French, German, Italian, Portuguese.
Save Settings - **Permanent*** - Saves changes even after power is turned off. **Temporary** - Saves until changed again or until power is turned off. **Cancel** - Cancels all changes since entering Config mode. **Load defaults** - Loads Factory defaults. **N/A** **N/A** **N/A** **N/A** **N/A**	**CONFIG CONTROL Menu,** **Save Config.** - Saves changes to 8 cust. Configs. (same as Zebra Permanent). **NOTE:** Changes to all configs. act same as Zebra Temporary mode unless config. saved as 1 of 8 custom Configs. **Cancel N/A** - Printer auto cancels like Zebra if Config changes are not saved or if another Config is loaded. **Load Config.** - Loads Factory default and 1-8 custom configurations. **Power-Up Config** - Selects Factory or 1 of 8 custom Configs. as power-up configuration. **Delete Config.** - Deletes any of up to 8 saved custom configurations. **Print Config**. - Prints Factory, Pwr-Up, Current, All, or custom Configs. 1-8. **Protect Configs.** - When enabled, prevents saving & overwriting any existing saved custom Config. **Name Config. 1-8** - Permits using up to 15 characters to name a custom Config.
Format Convert – (**None***, 150-300, 150-600, 200-600, 300-600). Selects the bitmap scaling factor.	**IGP/PPI1 SETUP Menu,** **Resolution Mode** - **Full***, Half
Idle Display (opt)- (**Firmware ver,** mm/dd/yy (24 hr), dd/mm/yy (24 hr), mm/dd/yy (12 hr), dd/mm/yy (12). Sets LCD display options for real time clock, if installed.	**N/A**

Table 32: PPI1 Menu (continued)

Zebra *XiIII* Series	T5000e with PPI1 Emulation
Set Date (opt) **mm/dd/yy** **dd/mm/yy**	**N/A**
Set Time (opt) **24 hour** **12 hour**	**N/A**
IP Resolution (opt) - **Dynamic*** - Server selects IP Address. **Permanent** - User selects IP Address.	**N/A**
IP Protocols (opt) - (**All***, Gleaning only, RARP, BOOTP, DHCP). If Dynamic set in IP Resolution, this selection determines method(s) that the PrintServer will receive the IP Address from the server.	**N/A**
Subnet Mask (opt) - **Dynamic** - User may set, but server can assign. **Permanent*** - User must set.	**ETHERNET ADDRESS Menu, (opt)** **Subnet Mask -** User sets Subnet Mask for TCP/IP protocol un less it is Dynamic, then read-only.
Default Gateway (opt) -Sets Gateway Address.	**ETHERNET ADDRESS Menu, (opt)** **Gateway Address -** Sets Gateway Address.
Print Speed - N/A in menu. Selected via software sent from host.	**QUICK SETUP Menu,** **Print Speed -** (2 to 10 ips). Printer width & model dependent. Also, selectable via software sent from host.
Orientation - N/A in menu. Selected via software sent from host.	**QUICK SETUP Menu,** **Orientation** - **Portrait***, Landscape, Inv-Portrait, Inv-Landscape.

Table 33: PPI2 Menu

TEC B-470/870 Series	T5000e with PPI2 Emulation
PARAMETER SET MODE, **Feed Adjust** - (-50.0 to +50.0 MM) **+0.0 MM*** - Feed length, fine adjustment. Adjusts vertical print position on label. **(-)** value moves the image down from the leading edge of the label. **(+)** value moves the image up toward the leading edge of the label.	**QUICK SETUP Menu,** **Ver Image Shift** - (-1 to+12.8") **0.0*"**. Adjusts vertical print position on label. **(-)** value moves the image up toward the leading edge of the label. **(+)** value moves the image down from the leading edge of the label.
PARAMETER SET MODE, **Cut Adjust** - (-50.0 to +50.0 MM)**+0.0 MM -** Cut or tear off strip position, fine adjustment. **(-)** value sets leading edge of label behind the tear bar. **(+)** value sets the leading edge of the label past the tear bar.	**QUICK SETUP Menu,** **Paper Feed Shift -** (-0.50 to+12.8) **0.00 Inch*** - Adjusts Tear Off, Tear-Off Strip, Peel-Off & Cut position in Inches or MM. **(-)** value sets leading edge of label behind tear bar. **(+)** value sets the leading edge of the label past the tear bar.
PARAMETER SET MODE, **Back Feed** - (-9.5 to +9.5 MM) **+0.0 MM** - Adjusts vertical print position on label. **(+)** value moves the image down from the leading edge of the label. **(-)** value moves the image up toward the leading edge of the label.	**QUICK SETUP Menu,** **Ver Image Shift** - (-1 to+12.8") **0.0*"**. Adjusts vertical print position on label. **(+)** value moves the image down from the leading edge of the label. **(-)** value moves the image up toward the leading edge of the label.
PARAMETER SET MODE, **X Adjust** - (-99.0 to +99.0 MM) **+0.0 MM** - X axis (horizontal) print position, fine adjustment. **(+)** value shifts image left. **(-)** value shifts image right.	**QUICK SETUP Menu,** **Hor Image Shift -** (-1.0 to +1.0) **0.0"***. Adjusts image horizontally from left edge of label in inches. **(+)** value shifts image left. **(-)** value shifts image right.
PARAMETER SET MODE, **Tone Adjust <T> -** (-10 to +10) **+0***. Darkness of image on label for Thermal Transfer printing (use of ribbon).	**QUICK SETUP Menu,** **Print Intensity -** (-15 to +15) **-3*** **Print Mode -** (**Transfer,** Direct)
PARAMETER SET MODE, **Toner Adjust <D>** - (-10 to +10) **+0***. Darkness of image on label for Direct Thermal printing (no ribbon).	**QUICK SETUP Menu,** **Print Intensity -** (-15 to +15) **0*** **Print Mode -** (Transfer, **Direct**)
PARAMETER SET MODE, **Font Code** - **(PC-850*** or **PC-8)**	**IGP/PPI2 SETUP Menu,** **Character Set - (PC-850*** or **PC-8)**
PARAMETER SET MODE, **Zero Font** - (**0*** or Ø) Selects 0 or slashed Ø.	**IGP/PPI2 SETUP Menu,** **Slash Zero - (0*** or Ø**).**
PARAMETER SET MODE, **Code -** (**Auto*,** ESC, LF, NUL or { | }) Selects the command code.	**IGP/PPI2 SETUP Menu,** **SFCC Select - (Auto Select***, ESC, LF, NUL, User Defined or { | }**)**

Table 33: PPI2 Menu (continued)

TEC B-470/870 Series	T5000e with PPI2 Emulation
PARAMETER SET MODE, **Ribbon** - (Trans. or **Non-Trans*) -** **Non-Transmissive -** With ribbon Transmissive - Ribbon out	**QUICK SETUP Menu,** **Print Mode** - (**Transfer*** or Direct)
Auto Ribbon Save Function - (**Without*,** With) **– (Opt) Dip SW 1 (1)**	**N/A**
Language - Sets the display language. **English***, Spanish, French, German, Dutch, Japanese. **Dip SW 1 (2-4)**	**PRINTER CONTROL Menu,** **Display Language - English***, Spanish, French, German, Italian, Portuguese.
Rewinder Use- (**Without*,** With) **Dip SW 1 (6)**	**Factory installed Option -** No menu selection required.
Baud Rate - (**9600*,** 2400 - 19200) **Dip SW 2 (1-2)**	**SERIAL PORT,** **Baud Rate -** (**9600***, 600 - 115200)
Stop Bits – (**1 bit*** or 2 bits) **Dip SW 2 (3)**	**SERIAL PORT,** **Stop Bits - 1*** or 2
Word Length – (**7-bits*** or 8-bits) **Dip SW 2 (4)**	**SERIAL PORT,** **Word Length** 7 or **8***
Parity Check - (**With*** or Without) **Dip SW 2 (5)**	**SERIAL PORT,** **Parity -** (**None***, Even, Odd)
Parity - (**Even*** or Odd) **Dip SW 2 (6)**	**SERIAL PORT,** **Parity -** (**None*,** Even, Odd)
Data Protocol - **XON/XOFF*,** Ready Busy (DTR), XON/XOFF +Ready Busy(DTR). **DIP SW 2 (7-8)**	**SERIAL PORT,** **Data Protocol -** **(XON/XOFF***, ETX/ACK, ACK/NAK, Series 1 Char, Series 2 Char or DTR)
N/A	**IGP/PPI2 SETUP Menu,** **Active -** (**Yes***, No) **Yes** - All data is parsed by the PPI2 emulation. Non-PPI2 data is absorbed. **No** – All data is passed to the LP+ emulation.
N/A	**IGP/PPI2 SETUP Menu,** **Image Scale -** (**Disable***, Enable) **Enable** - Images are scaled from TEC printer resolution (306 dpi) to PPI2 resolution (300 dpi). **Disable** - No scaling, resulting in 2% larger images on PPI2 printers vs TEC printers.
N/A	**IGP/PPI2 SETUP Menu,** **EURO Symbol -** (0x0 - 0xFF) **0XB0*** Allows configuration position of _ symbol in the code pages.

Table 33: PPI2 Menu (continued)

TEC B-470/870 Series	T5000e with PPI2 Emulation
N/A	**IGP/PPI2 SETUP Menu,** **Speed CMDs -** (**Process***, Ignore) **Process** - Print speed in the XS command & slew speed in the T command will be used and override the Media Control menu settings. **Ignore** - Print speed in the XS command & slew speed in the T command will have no effect. The Media Control menu settings will be used instead.
N/A	**IGP/PPI2 SETUP Menu,** **AY Intensity CMD -** (**Process***, Ignore) **Process** - Print Intensity via the AY command is used & overrides the Quick Setup menu value. **Ignore** - Print Intensity via the AY command is ignored. Quick Setup menu value used instead.
N/A	**IGP/PPI2 SETUP Menu,** **U1/U2 Move CMDs -** (**Process***, Ignore) **Process** - U1 move media forward & U2 move media backward cmds are used & override the Quick Setup menu Ver Image Shift value. **Ignore** - U1 and U2 commands are ignored and Quick Setup menu Ver Image Shift value is used.
N/A	**IGP/PPI2 SETUP Menu,** **XS Media 'D' Act -** (**Tear-Off***, Peel-Off, Ignore, Continuous, Tear-Off Strip) Uses the XS media 'D' command to select any of the Media Handling modes listed above **Ignore** - The printer only uses the Media Handing mode selected in the Quick Setup menu.
N/A	**IGP/PPI2 SETUP Menu,** **AR Pre-feed CMD -** (**Process***, Ignore) **Process** - Printer uses the media pre-feed AR command. **Ignore** - Printer ignores the pre-feed AR command. Media is not pre-fed.
N/A	**IGP/PPI2 SETUP Menu,** **AX Fine Adj. CMD -** (**Process***, Ignore) **Process** - Position fine adjust AX command is acted on if received. **Ignore** - Position fine adjust AX cmd is ignored if received. Media will not be fine adjusted.

G *Glossary*

Baud (rate) Baud Rate is the number of information bits that can be transmitted between the printer and the computer in one second. For example, one baud equals one bit per second in a series of binary signals. Both the printer and the computer must be configured to the same baud rate.

BIT Binary digIT. A digit in the binary number system, represented by a 0 or a 1. A bit is the smallest unit of storage in a digital computer.

Boot-up The start-up procedure which causes a computer operating system to be loaded into main memory.

Buffer An area of storage into which data is read or written temporarily during data transfers.

Coax Coaxial cable. A type of cable with a single wire surrounded by insulation and a braided shield.

Configuration Refers to the operating properties that define how the printer responds to signals and commands received from the host computer at the printer interface. These properties are called configuration parameters and are set to match the operating characteristics of the host computer system.

Continuous Media Media comprised of one continuous length without a gap, notch, hole, or black mark to establish a predetermined label or tag length. With this media type, the Host Form Length or user-selected Label Length sets the desired length of each label.

Continuous Media Handling Mode A media handling mode that advances media in the forward direction only.

Controller An independent functional logic unit in a data processing system that controls data paths between one or more units of peripheral equipment.

Data Bits — Binary information sent to the printer; a character set grouping containing letters, digits, and punctuation marks to be printed.

Default — A value, parameter, attribute, or option that is assigned by a program or system when another has not been specified by the user.

Diagnostic — Pertaining to the detection and isolation of a printer malfunction or mistake.

Direct Thermal Media — Media coated with special chemicals that act as an accelerator, acceptor dye, and binder. In Direct Thermal mode, the heat from the selected rectangular elements in the thermal printhead makes direct contact with the media (no ribbon is used) and causes a chemical reaction that creates the image on the media.

Direct Thermal Printing — A printing method in which no ribbon is used to transfer data from the printhead to the media to create an image. The thermal printhead selectively heats small rectangular elements which make direct contact with the coated media.

DRAM — Dynamic Random Access Memory. Can be read from or written to at any time. DRAM is volatile: whatever is in DRAM is lost when power is turned off.

EPROM — Erasable Programmable Read Only Memory. Programs, instructions, and routines permanently stored in the printer that cannot be written to. Files in EPROM are not lost when power is turned off. (Resident fonts are fonts permanently stored in EPROM and available at any time, via software commands.)

Fanfold Media — Media supplied in a fanfold stack instead of a roll format.

Flash Memory — Nonvolatile memory. See Nonvolatile Memory.

Font — A collection of printing characteristics for printing alphanumeric characters, all of which combine to produce a distinctive style of print.

Host Computer	The computer that stores, processes, and sends data to be printed, which communicates directly with the printer. The term “host” is used to indicate the controlling computer, since modern printers are themselves microprocessor-controlled computer systems.
Interface	The hardware component used to link two devices by common physical interconnection, signal, and functional characteristics.
IPS	The speed at which the media is printed based on a rate of Inches-Per-Second.
Label Liner (backing)	The material labels are attached to during their manufacturing process. Attachment is usually accomplished with an adhesive. After printing, labels can be easily removed from the liner and the liner discarded or recycled.
Label Taken Sensor	A sensor located at the front of the printer to detect the presence of a label extended out the front of the printer. The sensor is used only during Peel-Off and Tear-Off Media Handling to sense a label and then detect its removal prior to printing the next label.
Media	Material onto which data is printed by the printer. The types of media supported by the printer are die-cut labels or tag stock, supplied in roll or fanfold format. Media is further described by the type of sensing used to detect the Top-of-Form position based on the label length indicators used. Transmissive (Gap) media uses a liner gap, notch, or hole between labels, and Reflective (Mark) media uses a horizontal black mark located on the underside of the tag stock or label liner. Continuous media (with no label length indicators) uses no sensing method, and the operator determines which label length is desired.
Media Sensor	The sensor used to detect the presence of media in the paper path as well as the gap, notch, or hole position of Transmissive media or the horizontal black mark on Reflective media.
Memory	See RAM, Nonvolatile Memory, DRAM, and Flash Memory.

Nonvolatile Memory Nonvolatile memory stores variables that must be preserved when the printer is turned off, such as configuration parameters and printer usage statistics. Nonvolatile memory is preserved because RAM is housed on the controller board, which contains an independent, battery-operated power supply. When printer power is turned off, the battery supplies the power needed to keep stored data active. Nonvolatile memory also includes storage in disk.

NVRAM Acronym of Nonvolatile Random-Access Memory. See Nonvolatile Memory.

Parity (check) Parity checking is the addition of a non-data bit to data, resulting in the number of “1 bits” being either always even or always odd. Parity is used to detect transmission errors. Parity represents value in the check digit of the received or transmitted data.

PCBA Printed Circuit Board Assembly. A PCB with components (ICs, resistors, capacitors, etc.) installed.

Port A data channel used for receiving data from or transmitting data to one or more external devices.

Protocol The rules and conventions that govern communication between a printer and a host computer. A protocol includes codes for printing text and graphics and codes instructing the printer to perform special operations.

RAM Random-Access Memory. Also called “main memory” or “working memory.” It is the active memory of the printer into which programs are loaded. RAM is saved to volatile memory because data in RAM is lost when power is turned off or interrupted.

Reflective Sensing Use of the lower media sensor only to transmit and receive infrared light off the underside of media to detect gaps, notches, holes, or horizontal black marks used for determining the Top-of-Form position on labels or for indicating a Paper Out condition.

Resolution A measure expressing the number of component units in a given range used to create an image; in printing, expressed as the number of dots per inch (dpi) horizontally and vertically.

Roll Media Media supplied in a roll format, usually wound on a 1-inch or 3-inch cardboard core. The T5000 media hanger assembly accepts both core sizes.

Sensed Distance	**Gap/Mark Sensor = Gap, Advanced Gap, or Advanced Notch**: The Sensed Distance value is the physical length of one label plus the length of one gap. **Gap/Mark Sensor = Mark**: The Sensed Distance value is the physical distance from the leading edge of one black mark to the leading edge of the next.
Slew	Vertical paper movement.
Stop Bits	The signal which indicates the end of a character or element.
Thermal Transfer Media	Media specifically designed to work with a ribbon for image transfer. In Thermal Transfer mode, compatibility between the ribbon and the media is critical in producing a high quality, long lasting image.
Thermal Transfer Printing	A printing method in which the printhead presses a specially coated ribbon against the media. The printhead elements react with the ribbon and bond the image to the media.
Transmissive Sensing	Use of the upper media sensor to transmit infrared light through the top of media which is then received by the lower media sensor to detect gaps, holes, or notches for determining the Top-of-Form position on labels or for indicating a Paper Out condition.
Twinax	Twinaxial. A type of cable with two wires surrounded by insulation and a braided shield.

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For technical assistance, contact your Distributor/VAR/Reseller for service.

For further assistance, contact the Printronix Customer Support Center.

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